

CONCEPT DEVELOPMENT OF COLLEGE STUDENTS EXPOSED
TO SYSTEMATIC, ORGANIZED LEARNING EXPERIENCES
IN FAMILY RELATIONSHIPS

By

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CHAPTER I

INTRODUCTION

Significance of the Problem

The challenge of such developments as the expansion of knowledge, the demand for intellectual depth in the educative process, emphasis on the development of problem solving ability as a function of education and concern for efficiency and economy in teaching and learning has motivated educators in many disciplines to re-examine the content structure and methodology of their specific areas of specialization. As a result, these educators have come to recognize the necessity of curriculum revision. At the same time, there is recognition of a need for improving the teaching-learning process. Tyler states in relation to these developments:

Not only are the number of facts increasing at a rapid rate, but new discoveries change the meanings and implications of many of the facts which were previously known. Hence memorizing huge numbers of facts today will not provide adequate understanding for tomorrow. Students who are crammed full in this way will find several years hence that they have a mixture of information and misinformation rather than an adequate background to understand our changing world and to use its material, intellectual, and esthetic resources effectively.¹

Scholars in the areas of mathematics and physical sciences were among the first to re-examine their curriculums and approaches to

¹Ralph W. Tyler, "The Knowledge Explosion: Implications for Secondary Education," The Educational Forum, Vol. 29, No. 2, January, 1965, p. 145.

teaching and to propose revision and reorganization based on basic concepts and generalizations. Their endeavors have been followed by those of educators in the biological and social sciences. In an effort to up-date the curriculum and develop its structure, educators are concerned with developing and identifying concepts central to the discipline. These concepts, according to Bruner, delineate the basic principles or fundamentals which make a subject comprehensible.² With an organized body of knowledge it is believed to be possible to organize learning experiences for more efficient learning. Dressel notes that concepts serve as unifying elements as they are continuously used at the various levels of learning within a particular field and in related fields of knowledge.³ Furthermore, Dressel suggests that efficiency of teaching and learning may be increased through the existence of a clear and limited number of concepts in a subject matter area. Scholars in the various subject matter areas, including home economics, are becoming increasingly concerned with identifying or developing concepts and studying the process of teaching for conceptual understandings.

Current interest in the use of concepts in the teaching-learning process suggests an immediate concern of educators regarding what to teach in view of the tremendous amount of available knowledge and also how to teach effectively that which is significant. Dressel observes

²Jerome S. Bruner, Process of Education, (Cambridge: Harvard University Press, 1960), pp. 23-24.

³Paul Dressel, "The Role of Concepts in Planning the Home Economics Curriculum," Home Economics Seminar: A Progress Report (French Lick, Indiana, July 24-28, 1961), p. 9.

that there was a time a few hundred years ago, or even fifty years ago, when a well-educated person might aspire to know something about the majority of the major ideas and much of the related facts in all fields of knowledge. However, in today's society, this is no longer possible and there is grave danger that those individuals who make the attempt will acquire only fragmentary, unrelated information.⁴ The main objective, then, of developing concepts as a basis for curriculum development is to synthesize from a whole body of knowledge in a given content area, those significant ideas which the student can use in the organization of experience and in solving problems. This, educators believe, not only makes the multiplicity of knowledge comprehensible but also contributes to effective learning, primarily through the development in the student of the power of critical thinking. Consequently, the conceptual approach to teaching now engages the serious attention of educators among the various disciplines. Otto proposes that the thesis of the concept approach is to teach people to think and to use concepts and generalizations as a basis for curriculum patterns.⁵

While home economists have made considerable progress in identifying and developing concepts basic to the discipline, there is a definite need for research related to concept development such as methods of instruction which lead the student to develop concepts as well as other factors which may influence the process of concept development. A survey of the literature indicates an obvious lack of basic research in

⁴Ibid., p. 8.

⁵Arleen Otto, "A Case for Home Economics Concepts Implementation," (Speech presented at American Vocational Association Convention, Teacher Education Section Meeting, Atlantic City, New Jersey, December, 1963).

home economics concerning the conceptualization process, teaching for conceptual understandings, the attainment of concepts by students, the development of a concept, the demonstration of a meaningful grasp of concepts or the attributes of such a teaching-learning process. While the concept approach to teaching appears to be based on sound philosophical and psychological assumptions, it appears that basic research is needed in the various subject matter areas in home economics to give intelligent direction to present and future attempts at curriculum revision and/or the improvement of the teaching-learning process. Otto states, "The theory of cognition and conceptualization is complex and not completely clear to the psychologist and educator as all of the research which needs to be done has not been done."⁶

Statement of the Problem

The present investigation, which is exploratory in nature, was designed to ascertain whether or not a systematic, organized approach to concept teaching in family relationships results in the ability of college students to develop conceptual understandings. The study was undertaken to determine if student conceptualization in interpersonal relationships as applied to family situations occurs in certain learning situations and if a limited number of selected factors are related to the development of conceptual understandings. More specifically the study was an attempt to answer the following questions:

1. Do certain selected teaching procedures encourage the development of conceptual understandings in interpersonal relationships as applied to family interaction?

⁶ Ibid.

- a. Do specific learning experiences encourage the development of conceptual understandings?
 - b. How much teacher guidance is necessary for students to formulate appropriate generalizations based on learning experiences?
 - c. Does the number of encounters with relevant learning experiences provided for each concept result in the development of conceptual understandings?
2. Are specific factors, in addition to organized learning experiences, related to the student's development of conceptual understandings in family relationships?
- a. Is academic ability related to the attainment of conceptual understandings? If so, what is the nature of the relationship?
 - b. Are certain personality factors related to the student's ability to conceptualize in terms of interpersonal relationships in family interaction?
 - c. Does previous experience with the conceptual approach to teaching influence subsequent development of such understandings?
3. Can levels of conceptual understanding be identified in terms of levels of generalizations and cognitive processes utilized?

Levels of generalizations, described by the writer in a later section, consists of three categories: (1) first level generalizations which may be definitions or descriptions of concepts, (2) second level generalizations which may include more ideas than first level,

show relationship among the ideas and make comparisons and (3) third level generalizations which explain and interpret relationships among ideas and may involve prediction based on an understanding of cause-and-effect relationships. In terms of cognitive processes, conceptual understanding at each level may involve one or more of the following: (1) knowledge, (2) comprehension, (3) application, (4) analysis, (5) synthesis and (6) evaluation.

The major hypotheses investigated were: (1) A systematic, organized approach to concept teaching in family relationships will result in the development of conceptual understandings by the students. (2) Factors other than learning experiences are related to concept development of students.

Delimitations of the Study

This investigation was limited to the teaching of one major concept and four supporting concepts in two freshman classes in family relationships at Arizona State University. The study was conducted during the fall semester of the 1965-66 school year. Learning experiences were organized around the four supporting concepts which constituted one of four units taught during the semester. Non-standardized instruments developed by the investigator were used to measure degree of conceptualization and conceptual understandings. These were limited to three devices: a Definitions Test, an Application of Principles Test and student statements of generalizations. No attempt was made to develop or measure attitudes or changes in emotional or social behavior. While these were recognized

as desirable objectives, it was necessary to limit the behaviors studied in view of the scope of this study.

Definition of Terms

One of the confusing aspects of the use of concepts as a basis for curriculum development and teaching centers around the use and meaning of the term itself. Concept is used at many different abstraction levels, sometimes carrying the more common meaning of such terms as percept, principle and generalization. Thus a clarification of these and other terms employed throughout this study seems essential.

According to Woodruff, percepts are the mental products of our sensory experience. Through personal interaction with something in the world the individual gets a mental impression of it. This is a percept and the initial step in the formation of a concept.⁷ Dressel, in a discussion of concepts, notes that of the basic elements in curriculum identified by Tyler, i.e., concepts, skills and values, concepts include the cognitive aspect of the curriculum as it is embraced in significant ideas inclusive of definitions, generalizations, principles and unifying or integrative words or phrases. Each term, concepts, skills and values is a concept.⁸ Logan describes concepts as general ideas which give order to percepts and thus to experience. They usually refer to a category or class of objects and are expressed by

⁷Asahel Woodruff, Basic Concepts of Teaching (San Francisco: Chandler Publishing Co., 1961), p. 70.

⁸Dressel, p. 11.

words.⁹ She further states that a concept shows relationships between things, people and actions. Concept formation results from thinking of similarities and groups and involves comparison, generalization and reasoning.

Butts conceives of concepts as the merger of perceptions into configurations. He contends that this merging is the awareness of the relationship between the perceptions to the extent that specific patterns or configurations of perceptions are seen.¹⁰ These patterns or configurations are the concepts. Butts, however, believes that:

A concept is more than a merging of percepts; it is a dynamic part of the cognitive structure that helps direct the attention of a student in a new situation; it helps organize the new perceptions into new meaningful configurations or new concepts.¹¹

Garone seems to support this dynamic aspect of the concept when he says:

. . . concepts represent the ultimate essence of past experiences and provide the embryonic structure for present and future experiences. . . they are the organizations of experiences, individualized networks of mental configurations.¹²

On the basis of these definitions and descriptions of percept and concept, it seems logical to conclude that percepts occur through

⁹Nell P. Logan, "A Further Look: Concepts, Generalizations and Generalizing," (Speech presented at curriculum workshop in Housing, Interior Design and Furnishings, and Equipment, Stillwater, Oklahoma, June 21, 1963).

¹⁰David P. Butts, "The Degree to Which Children Conceptualize from Science Experience," Journal of Research in Science Teaching, Vol. 1, June, 1963, p. 135.

¹¹Ibid.

¹²J. Garone, "Children's Scientific Concept Development," Science Education, Vol. 44, 1960, p. 104.

personal interaction with something in the environment. These percepts are then organized into meaningful patterns and become concepts. The concepts, expressed by words, are symbolic constructs that can then be used without the physical presence of the objects that initiated the perception. While concepts also may be expressed as words, Dressel observes that they also may be stated as phrases, statements of principles, generalizations or values.¹³ What, then, are generalizations?

Eppright, Pattison and Barbour assert that:

. . .Generalization is a generic term which includes principle. There are not generally accepted criteria for differentiating between generalizations, principles, laws, rules or facts of broad application.¹⁴

These authors use the term to describe a statement of fact or belief that organizes ideas. Generalizations, as defined by Logan, are abstract statements which show relations between concepts. They are expressed as understandings, conclusions, principles, laws or rules and give order and meaning to knowledge.¹⁵ Dressel contends that ideas are an illustration of the concept in pure form while generalizations and principles require a statement of relationships among concepts.¹⁶ He further notes that a principle or a generalization may also state a higher level concept. Although Burton concedes that while any full generalization or principle is a concept, he believes

¹³Dressel, p. 12.

¹⁴Erce Eppright, Mattie Pattison and Helen Barbour, Teaching Nutrition (Ames, Iowa: Iowa State College Press, 2nd edition, 1963, p. 102.

¹⁵Logan.

¹⁶Dressel, p. 13.

a concept is often bigger, broader, more "fuzzy" and will "cover more ground" than generalizations.¹⁷

A concept may be defined, then, as a basic idea, expressed in words, which gives order and meaning to knowledge and experience and refers to a category of objects or events. A concept may be conceived as a meaningful idea -- an idea that develops and changes as the person increases understanding through new and varied experiences. In the educative process, it is assumed that concepts form the basic structure of content areas and consist of the basic principles or fundamentals that make any subject meaningful to students. Concepts are seen as giving unity to knowledge and providing a basis for the organization and evaluation of learning experiences.

A generalization may be defined as a statement supported by fact, that has an element of universality and usually indicates relationships. It is expressed as a conclusion, understanding, or principle and gives meaning and order to knowledge. Concepts and generalizations are not, according to the literature, separate and distinct, nor is a clear distinction between the two necessary for most educational purposes. Their value in the educative process theoretically lies in the assumption that an understanding of the systematic concepts upon which a field of knowledge rests provides the student with a frame of reference for thinking and evaluating future experience. Concept development requires thinking, as it requires the student to connect and

¹⁷William Burton, "Concept Development and the Curriculum," Report of Pacific Regional Conference, Home Economics Education, (Portland, Oregon, March 19-23, 1962), p. 19.

explain events and predict what is apt to happen in future experiences.

Concepts in home economics may be conceived as abstractions which denote the basic ideas or categories in a particular subject matter area such as family relationships. Generalizations may be used to refer to those principles, understandings and conclusions which support and give meaning to the abstraction or basic idea. For example, one of the categories or basic ideas which may be delineated in family relationships is Interpersonal Relationships. Sub-concepts related to this category are: Empathic Ability, Respect for Worth and Dignity of the Individual, Healthy Concept of Self and Communication. The concept, Empathic Ability, is an abstraction denoting a basic idea and in this instance a basic element of Interpersonal Relationships. Supporting this basic idea are generalizations such as the following: "Empathy is a form of knowing which promotes understanding between people"; "Marital adjustment is made easier when husband and wife make positive use of empathic ability"; "The quality of interpersonal relationships in dating, in the family and in other personal relationships is greatly influenced by the degree to which the empathic process is involved." The concepts in this instance are the significant ideas, the unifying elements for learning experiences in family relationships, supported by generalizations that have broad applicability and usually show relationships between things, people and actions.

In relation to levels of generalizations and cognitive processes, it is assumed that conceptualization may occur at various levels of difficulty in terms of a hierarchy of cognitive processes, though such levels are not always clearly separated or identifiable. First level generalizations are likely to be either a description, a definition, an

analogy, an identification or a classification.¹⁸ In terms of Bloom's Taxonomy of Educational Objectives conceptualization at this level utilizes knowledge and comprehension.¹⁹ Knowledge, as defined by Bloom, involves the recall of specifics and universals, the recall of methods and processes or the recall or recognition of a pattern, structure or setting. At the knowledge level, conceptualization involves primarily the process of bringing to mind appropriate material. Comprehension represents the lowest level of conceptual understanding in that the person knows what is being communicated and can make use of the idea being communicated without necessarily relating it to other material or seeing its fullest implications. At this level the student would be expected to be able to define a concept, place an idea or event in the proper category or describe an event or object.

Second level generalizations show relationships among ideas. They may make comparisons, and may include more ideas than on the first level.²⁰ The cognitive processes at this level of conceptualization utilize, in addition to knowledge and comprehension, application and analysis. Application as a process, according to Bloom, involves use of principles, ideas and theories which must be remembered and applied to particular and concrete situations. Analysis involves the breakdown

¹⁸Mimeographed Work Material for Curriculum Workshops, Department of Health, Education, and Welfare, Office of Education, Division of Vocational Education, Home Economics Education Branch, Washington, D.C., /n.d./

¹⁹Benjamin S. Bloom, Editor, Taxonomy of Educational Objectives (New York: Longmans, Green and Co., 1956), pp. 201-207.

²⁰Mimeographed Work Material for Curriculum Workshops, Department of Health, Education, and Welfare, Office of Education, Division of Vocational Education, Home Economics Education Branch, Washington, D.C., /n.d./

of material into its constituent parts so that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit. Such analyses are intended to clarify how the material is organized or related. At this level the student would be expected to draw relationships among ideas and draw conclusions based on these relationships. He would be expected to recognize differences and similarities among ideas and situations and to be able to apply principles to specific situations.

Third level generalizations usually explain, justify, interpret, or predict. They may be more remote in time and space.²¹ Conceptualization at this level involves, in addition to all the cognitive processes utilized in first and second level generalizations, synthesis and evaluation. Synthesis, according to Bloom, involves the putting together of elements and parts so as to form a whole. It involves the process of combining ideas and principles in such a way as to constitute a pattern or structure not clearly seen before. Evaluation involves making judgments about the value of material and methods for given purposes. Quantitative and qualitative judgments are made about the extent to which materials and methods satisfy criteria determined by the student or those which are given to him. At this level of the conceptualization process the student should be able to analyze data, recognize basic ideas and relationships among them, and put them together in the form of a broad, basic generalization of fact with broad applicability and a high degree of validity. The students should be able to evaluate specific situations, see cause-and-effect

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ibid.

relationships, predict consequences, and pass judgment on the relative value of prescribed courses of action.

One would expect, then, that conceptualization would range from the less complex to the more complex levels of thinking as delineated by Bloom in his classification structure of the cognitive processes. Thus it would seem that instructional activities should be aimed at developing concepts at different levels of cognition.

For the purpose of the present study, the following "operational" definitions were used:

1. Systematically organized learning experiences. Learning experiences which are sharply defined and aimed at teaching one important concept.
2. Concepts. The mental configurations, meaningful ideas or patterns, held by the student. They are the basic ideas which give structure and unity to knowledge.
3. Sub-concepts. Smaller concepts or ideas which are parts of larger concepts. Sub-concepts when understood support and give meaning to the larger concept.
4. Generalizations. Statements supported by fact that have an element of universality and usually indicate relationships. They may be expressed as conclusions, understandings or principles. A generalization is not clearly distinguishable from a concept.
5. Conceptualizing. A cognitive process based on inductive reasoning which brings random unassociated ideas and principles into organized knowledge and understanding. The process is essentially one of analysis, comparison and of seeing relationships among ideas and events. It is the organization of experience, the merging of events and percepts into a meaningful idea, pattern or mental configuration. Conceptualization represents the dynamic aspect of concept development.
6. Conceptual understandings. Conceptual understandings may range from an understanding of the definition of a concept to a more complete understanding of the relationships which exist among ideas, things, people and actions. A conceptual understanding at a more complex level involves an understanding of the

relationship which connects the solution to a problem with the problem and the ability to see the connection between certain acts and their probable consequences.

7. Levels of generalizations and classification of the cognitive processes. Definitions for three levels of generalizations have been developed by the Home Economics Education Branch of the Division of Vocational and Technical Education, Office of Education, Department of Health, Education and Welfare, Washington, D.C. These were used in their original form for purposes of the present study. The classification of cognitive processes utilized in the concept development at the three levels were based on Bloom's classification structure of the cognitive domain.
8. Academic ability. The ability of students to achieve in high school as indicated by rank in graduating class. Performance on the American College Test administered as a college entrance examination.
9. Personality factors. Self-actualization as measured by total score on the Personality Orientation Inventory (POI),²² and eight selected aspects of personality measured by the POI. The specific dimensions of self-actualization selected were: Inner-directed; Existentiality; Spontaneity; Self-Acceptance; Self-Actualizing Values; Feeling Reactivity; Self-Regard; Capacity for Intimate Contact.
10. Previous experience with conceptual approach to teaching. Having been exposed to a series of organized learning experiences in family relationships, sharply defined and aimed at teaching one important concept.

Procedure

In essence the study involved the following procedures:

1. One major concept, Interpersonal Relationships, was selected as the basis for the organization of content for one unit in a freshman level course in home economics at Arizona State

²²Everett L. Shostrom, Personality Orientation Inventory, (San Diego, California: Educational and Industrial Testing Service, September, 1963).

University. Learning experiences in relation to the concept, Interpersonal Relationships, were organized around four sub-concepts: (1) Empathic Ability, (2) Respect for the Worth and Dignity of the Individual, (3) Healthy Concept of Self and (4) Communication. A procedure, based primarily on the problem solving method, was developed for teaching each sub-concept. The larger concept, Interpersonal Relationships, was considered too comprehensive to teach without dividing it into smaller ideas or sub-concepts which support it or which constitute interpersonal relationships. When supporting or sub-concepts are understood they give meaning to the larger concept of which they are parts.

2. The four sub-concepts were taught to 131 students enrolled in two sections of H0 132, Personal Adjustment for Family Living, during the fall semester 1965-66. A variety of teaching techniques were used and the number was systematically decreased for each concept, I through IV. The amount of guidance given students in formulating generalizations was also systematically decreased as the group moved from one concept to another.
3. Conceptual understanding was measured through the use of statements of generalizations written by the students, a Definitions Test and an Application of Principles Test. The two tests were developed by the investigator.
4. American College Test scores and Rank in High School Graduating Class were used as indices of academic ability.

5. The Personality Orientation Inventory developed by Shostrom was used to measure personality adjustment.²³
6. Pearson product-moment coefficients of correlation were used to determine the relationship of selected factors to the development of conceptual understandings.
7. The Wilcoxon Matched-Pairs Signed Ranks Test was used to determine the extent to which students developed conceptual understandings. The Wilcoxon test was also used to determine the extent to which previous experience with the conceptual approach to teaching influenced subsequent development of conceptual understandings.
8. As an indication of the effectiveness of the teaching methods used, at the culmination of the unit on Interpersonal Relationships, each student was asked to select the five methods he considered most effective in helping him understand the four concepts taught. The student then ranked the methods from most to least effective. Each student was also asked to list the method he felt was least effective in helping him understand the concepts.

²³ Ibid.

CHAPTER II

THEORETICAL FRAMEWORK

The Functions of Concepts

The notion of concepts as fundamental elements in cognitive development has long been of interest to educators and psychologists. Piaget's theory of developmental psychology, which has as its core intellectual development, has for some time utilized the concept of cognitive structures or schemata in referring to a class of similar action sequences or a unitary behavior pattern. Much of his research has been concerned with the development of concepts and the study of conceptual abilities available to children as they develop.¹

Educationally-oriented studies of concepts which have been cited in the literature infer that concepts play a significant role in man's thinking processes as well as in the organization of subject matter. The importance of concepts in intellectual development can, perhaps, be better understood through an examination of their functions.

Sigel contends that one major reason adults function so efficiently is that they have developed a system of concepts that:

¹John H. Flavell, The Developmental Psychology of Jean Piaget (Princeton, New Jersey: D. Van Nostrand Co., Inc., 1963).

. . .serves as an experiential filter through which impinging events are screened, gauged, and evaluated, a process that determines in large part what responses can and will occur.²

Concepts function as an adaptive mechanism through which the individual copes with reality and thus serve as crucial links between the individual and the environment. Concepts may be conceived of as intellectual tools man uses in the organization of experience and in solving problems. Man employs concepts when he thinks in terms of categories, symbols and classes, and orders diversity into some meaningful pattern. Concepts constitute a repertoire of behaviors which enable the individual to deal effectively with the environment as he identifies and classifies environmental cues within the context of a particular concept.

From an educational perspective concepts are believed to serve a variety of functions. Concepts help the student discriminate, classify, analyze and achieve meaning through association. Concepts give structure and unity to knowledge, provide a basis for the organization of experience, facilitate transfer of learning and provide a framework for thinking.

Bruner conceives the process of concept development as learning structure. He states, "To learn structure is to learn how things are related, ways of arranging knowns and unknowns in equations so that unknowns are made knowable."³ Structure is the fundamental understandings and principles that form the basis for a subject matter area and make it comprehensible. In discussing the value and use of concepts,

²Irving E. Sigel, "The Attainment of Concepts," Review of Child Development Research, Edited by Martin L. Hoffman and Lois W. Hoffman. (New York: Russell Sage Foundation, 1964), p. 209.

³Jerome S. Bruner, The Process of Education (Cambridge, Mass.: Harvard University Press, 1960), p. 7.

Burton, Kimball and Wing conclude that concepts give us a relatively stable, relatively permanent system of knowledge subject to change as new facts are discovered, enable us to generalize, carry understanding quickly from one thing to another and to supplement knowledge of any specific thing by drawing on the total connotation of the concept.⁴ Concepts serve as unifying elements, Dressel suggests, as they are continuously used at various levels of learning within a particular field and in related fields of knowledge.⁵ Considering concept development in relation to the specific subject matter area of chemistry, Berger and Baumel propose that teaching which leads to the formation of concepts results in a reduction of complexity of subject matter and eliminates the necessity for constant learning.⁶ Concept teaching, they contend, also leads to identification of objects included in the subject, the ordering and relating of class events and provision of direction for future thought. They observe that facts have little meaning when no relationship is drawn among them.

Perhaps one of the most significant aspects of concept development in the teaching-learning process is the possibility that concepts and cognitive structures enable students to develop the ability to

⁴William H. Burton, Ronald B. Kimball and Richard L. Wing, Education for Effective Thinking (New York: Appleton-Century-Crofts, Inc., 1961), p. 155.

⁵Paul Dressel, "The Role of Concepts in Planning the Home Economics Curriculum," Home Economics Seminar: A Progress Report (French Lick, Indiana, July 24-28, 1961), p. 9.

⁶J. Joel Berger and Howard B. Baumel, "Developing Concepts in High School Chemistry," The Science Teacher, Vol. 28, February, 1961, p. 15.

think. The significance of this function of concepts lies in the value placed on thinking as a fundamental purpose of education. The report of the Educational Policies Commission states, "The purpose which runs through and strengthens all other educational purposes, the common thread of education, is the development of the ability to think."⁷ Woodruff notes that Woodring has stated that the fundamental aim of education is to enable people to make wise decisions.⁸ In relation to this viewpoint, Hall and Paolucci observe that a democratic society places value on rational thinking as a tool for decision making.⁹ Brubacher contends that according to Dewey's theory of education people are taught to think not because thinking is good in itself but because it is a means or instrument for solving problems in a precarious world.¹⁰ Streeter points to the importance of the thinking process when he contends that it is a cause for concern if our students fail to develop some sense of what is involved in responsible thought and statement, disinterested inquiry and sober judgment.¹¹ The purpose of thinking, according to

⁷Educational Policies Commission, The Central Purpose of American Education (Washington, D.C., National Education Association, 1961), p. 12.

⁸Asahel Woodruff, Basic Concepts of Teaching (San Francisco: Chandler Publishing Co., 1961), p. 46.

⁹Olive A. Hall and Beatrice Paolucci, Teaching Home Economics (New York: John Wiley and Sons, Inc., 1961), p. 119.

¹⁰John S. Brubacher, A History of the Problems of Education (New York: McGraw-Hill, 1947), p. 129.

¹¹R. E. Streeter, "Nature and Requirements of Learning," Educational Record, Vol. 40, October, 1959, p. 286.

Hook, is to reach conclusions. He maintains that the validity of conclusions depends upon methods by which they are reached.¹² Finally, in relation to thinking as a value in education, Hullfish and Smith point to its significance in their quote from Dewey:

No one doubts, theoretically, the importance of fostering in the school good habits of thinking. But apart from the fact that the acknowledgment is not so great in practice as in theory, there is not adequate theoretical recognition that all which the school can or need do for pupils so far as their minds are concerned (that is leaving out certain specialized muscular activities) is to develop their ability to think.¹³

Thelen supports this point of view when he asserts that students should develop the capacity for inquiry throughout all educational experience.¹⁴

Cognitive processes are those mental operations by which we become aware of objects of thought or perception. As indicated in Chapter 1, Bloom has delineated six levels of thinking: knowledge, comprehension, application, analysis, synthesis and evaluation.¹⁵ Cognition which involves these mental operations may be conceived as the process of knowing. Bloom relates concepts to the cognitive processes when he speaks of cognitive structure as the organization of facts, concepts and principles.¹⁶ Cognitive structure, according to Bloom, is determined partly by how man's

¹²Sidney Hook, Education for Modern Man (New York: Dial Press, 1946), p. 119.

¹³Henry G. Hullfish and Philip G. Smith, Reflective Thinking-The Method of Education (New York: Dodd, Mead and Co., 1961), p. 5.

¹⁴Herbert A. Thelen, Education and the Human Quest (New York: Harper and Brothers, 1960), p. 25.

¹⁵Benjamin S. Bloom, Editor, Taxonomy of Educational Objectives (New York: Longmans, Green and Co., 1956), pp. 201-207.

¹⁶Benjamin J. Bloom, "Testing Cognitive Ability and Achievements," Handbook of Research on Teaching, N. L. Gage, Editor, (Chicago: Rand McNally and Co., 1963), pp. 379-397.

mind works and partly by the nature of the subject. He believes that the implication of the concept approach to teaching and learning is that maximum advantage should be taken of the cognitive properties of learners and subjects. He further observes that properly organized subject matter presented to learners whose cognitive development and processes are correctly understood will produce learning of the best kind, according to the value system of many educators.

What is the nature of the cognitive processes? Thinking, according to Dewey, includes a sense of a problem, observation of conditions, formation and rational elaboration of a suggested conclusion and active experimental testing. He states, "Thinking, in other words, is the intentional endeavor to discover specific connections between something which we do and the consequences which result so that the two become continuous."¹⁷ Burton, Kimball and Wing present a similar view when they note that thinking involves recognition of a perplexity, awareness of conditions that surround it, examination of facts, setting up of hypotheses, search for more facts, looking critically at the facts and their interpretations, drawing conclusions and checking them against reality.¹⁸ Critical thinking, then, is the active, careful consideration of any belief or supposed form of knowledge in view of the data which support it and the further conclusions to which it leads. Thinking, as described in this context, seems to denote high level cognitive processes often described as critical, reflective, analytical or scientific thought.

¹⁷John Dewey, Democracy and Education (New York: The MacMillan Co., 1916), p. 170.

¹⁸Burton, Kimball and Wing, Ch. 2.

In relating critical thinking to the learning process, Bode indicates that from a pragmatic point of view learning is an intellectual affair identified with the perception of significant relationships.¹⁹ Concepts, in relation to such a viewpoint, may be seen as elements which show relationships among persons, things and processes and as the unifying feature of experience. Attainment of the concept or conceptualization as a dynamic affair involves the cognitive processes. In fact the process of concept formation may be related to Dewey's theory of learning as the reconstruction of experience. According to this theory the data for present learning experiences are derived from past experiences and, likewise, the residue from present learning experiences should enable the student to gain increased control over subsequent experiences. One might infer that the residue in concept development would be the concept which provides the framework for the reconstructing and unifying experiences. It would appear that concepts as viewed by Burton, Kimball and Wing as developing over a long period of time through many experiences would be central to reflective thinking as a function of learning.²⁰

In relation to the teaching-learning process, Dewey proposes that the future has to be taken into account at every stage of the educational process, i.e., every experience should do something to prepare a person for later experiences.²¹ Moreover, according to Dewey, no

¹⁹Boyd Henry Bode, How We Learn (Boston: D.C. Heath and Co., 1940), p. 254.

²⁰Burton, Kimball and Wing, pp. 162-163.

²¹Dewey, p. 170.

experience having meaning is possible without some element of thought. He further notes that the measure of the value of an experience lies in the perception of relationships or continuities to which it leads. One can readily see the significance of concepts within this philosophical framework. In concept development one must see relationships and the generalizations which are arrived at in the process become one's point of reference for predicting consequences of subsequent experiences. Burton, Kimball and Wing submit that it is impossible to think in any field of knowledge without an understanding of the systematic concepts upon which that field rests; concepts provide guideposts and frames of reference for thinking and thus enable the learner to connect, explain and identify events so he can predict what is apt to happen in the future.²²

On the basis of the viewpoints presented, one might conclude that concepts, conceived as organized patterns of relationships which help one achieve meaning from experience, make up the fundamental structure of an area of knowledge. Concepts include necessary items and exclude those not significant to meaning. Thus learning a subject or cognition, as the process of knowing, involves concept formation that entails the mental operations or levels of thinking involved in the cognitive process.

It may be concluded, on the basis of the literature reviewed, that concepts:

1. Provide intellectual tools which the individual uses
in the organization of experience and in solving problems.

²²Burton, Kimball and Wing, p. 154.

2. Give structure, unity and meaning to knowledge.
3. Facilitate transfer of learning.
4. Show relationships between things, processes, people and actions.
5. Provide a frame of reference for thinking and evaluating future experience.
6. Delineate the basic fundamentals which make a subject comprehensible.
7. Provide avenues for developing in the student the powers of critical thinking.
8. Provide the basis for the reconstruction of experience.

Cognitive Development as Related to Concept Teaching

Based on extensive research with children, Piaget asserts that the characteristics of intellectual functioning are invariant over the whole intellectual span; these entail organization, adaptation, assimilation and accommodation.²³ Assimilation refers to the cognitive structuring or restructuring which occurs with each cognitive encounter with an environmental object, while accommodation is the process of adapting oneself to the demands of the social and physical environment. Assimilation and accommodation are thought to occur simultaneously. Cognitive progress is slow and gradual as the organism can assimilate only those things which past assimilations have prepared it to assimilate. The new assimilatory structure must always be some variate of the last one acquired to insure gradualness and continuity

²³ Flavell, p. 67.

of intellectual development.

In the process of intellectual development, cognitive structures are modified in the sense of being extended to fit another object; cognitive structures are generalized to the new object. It is thought that the individual goes through a set of steps in intellectual development which are then transformed into a new level; as he proceeds from one stage to the next continuous integrations and re-integrations are made.

Within the framework of Piaget's theory of cognition, the cognizing organism is an active agent who constructs his world by assimilating it to conceptual structures while accommodating these structures to the environmental constraints. The motive for this cognitive activity, Piaget believes, is inherent in the individual. Berger and Baumel concur when they note that teaching for concept development assumes that an individual possesses an inherent desire to reduce phenomena of life to the most fundamental elements.²⁴ Stated in another way, the individual possesses an innate desire to organize experiences into significant, meaningful patterns. Accommodation to reality, Piaget maintains, is not possible without an assimilatory framework which facilitates the organization of experience.²⁵ This assimilatory framework may be conceived as a concept or cognitive structure.

The principles involved in Piaget's theory of cognitive

²⁴Berger and Baumel, p. 15.

²⁵Flavell, pp. 45-49.

development seem to hold several implications for the educative process, particularly the concept approach to teaching. The development of cognitive structures or if one prefers, the process of conceptualization, may be described as a dynamic, cognitive process which brings random, unassociated ideas and principles into organized knowledge and understandings. Conceptual learning is an active process which involves critical, reflective thinking. The implication is that learning experiences that facilitate cognitive development must utilize the cognitive processes. Thus it seems that method and content should be analyzed in terms of the cognitive processes or mental operations implicit in them. Cognitive development, within this context, may be viewed as the process of acquiring cognitive structures. This is consistent with Bruner's position that the process of concept development is that of learning structure.²⁶ During the process of gradual and continuous cognitive development, according to Piaget's developmental theory, these conceptual structures develop and undergo change.²⁷ This conclusion lends some support to the view that a concept as a meaningful idea held by a person develops and changes as the person increases his understanding of the concept through new and varied experiences.

The continuity aspect of cognitive development stressed by Piaget apparently relates to Dewey's concept of the continuity of experience when he asserts that the value of an educational experience lies in the perception of relationships or continuities

²⁶Jerome S. Bruner, Process of Education (Cambridge: Harvard University Press, 1960), p. 25.

²⁷Flavell, pp. 50-51.

to which it leads. Every experience should do something to prepare a person for later experiences. Learning, Dewey asserts, should not only take us somewhere, it should allow us later to go further more easily.²⁸ Piaget's concepts of assimilation as cognitive structuring and restructuring and his conclusion that the organism can assimilate only those things which past assimilation has prepared it to assimilate, that intellectual development is a process of continuous integrations and reintegrations,²⁹ appear consistent with Dewey's theory of learning as the reorganization of experience. Both viewpoints are consistent with Garone's description of concepts as representing the essence of past experience and providing the embryonic structure for present and future experiences.³⁰

Piaget apparently views intellectual organizations or cognitive structures as a system of relationships among elements. This seems to denote a similarity between cognitive structures as conceived by Piaget and concepts as viewed by educators and psychologists as giving order and unity to knowledge and revealing relationships between things, people and actions.

Reference is made in Piaget's theory of cognitive development to the constancy of intellectual functioning. The constant elements, organization, adaptation, assimilation and accommodation, seem to embrace the mental operations or processes involved in thinking or

²⁸Dewey, Ch. 11.

²⁹Flavell, p. 50.

³⁰J. Garone, "Children's Scientific Concept Development," Science Education, Vol. 44, 1960, p. 104.

problem solving. Baldwin in commenting on Piaget's concept of intelligence, notes that there appears in the child a strategy for problem solving that is very frequently used later.³¹ According to Piaget's stages of intellectual development, it is not until the period of formal operation, at approximately ages 11-15, that the child is able to take the final steps to true abstract thinking and conceptualization.³² At this stage he is able to make inferences, create and evaluate hypotheses and deduce logical conclusions. If one views the thinking process as the constant, dynamic aspect of intellectual functioning, this would substantiate the importance of concept formation as a means of helping students develop the ability to think.

In essence, the developmental psychology of Piaget, as described by Flavell, indicates that cognitive development is characterized by the following:

1. A dynamic process involving an active organism.
2. Acquisition of cognitive structures which develop and undergo change.
3. Gradualness and continuity.
4. An impetus for cognitive activity inherent in the cognitive domain of the individual.
5. Constancy of intellectual functioning.
6. Intellectual organizations as a system of relationships among elements.³³

³¹ Alfred Baldwin, Behavior and Development in Childhood (New York: Holt, Rinehart and Winston, 1955), p. 305.

³² Flavell, pp. 86, 204-205.

³³ *Ibid.*, Ch. 2.

The Acquisition of Concepts

Concepts are apparently acquired through a complex set of learnings which involve the processes of discrimination, perception and generalization. Through an increased ability to discriminate and generalize the individual develops concepts and becomes emancipated from the perceptual, sensory aspect of the environment and approaches it in a conceptual way. According to Piaget's theory of cognition, there are three basic functional and developmental characteristics of concepts--repetition, generalization and differentiation.³⁴ Only behavior patterns which recur in the course of cognitive functioning are conceptualized in terms of concepts. Repetition consolidates and stabilizes the concept, providing the necessary condition for change. Once constituted concepts apply themselves again and again to assimilate aspects of the environment. Generalization enlarges the concept by extending its area of application. Differentiation, the complement of generalization, has the consequence of dividing originally global concepts into several new concepts, each with a sharper, more discriminating focus on reality. The concepts not only undergo individual changes of this kind but also form more complex, interlocking relationships with other concepts.

The two central processes by which concepts are acquired are assimilation and accommodation.³⁵ In the process of assimilation the

³⁴Flavell, p. 56.

³⁵Ibid, p. 58.

individual internalizes aspects of the environment which become organized within classes or groups. During the process, the individual makes adjustments to new assimilations, a process referred to as accommodation. Intellectual development proceeds by assimilation of new information which results in the modification of some existent concept.

Berger and Baumel have identified three steps in the process of concept development. The first step involves perception or stimulation of the senses of the event.³⁶ Piaget believes that sensory experiences and direct contact with objects are fundamental to the early stages of cognitive development.³⁷ Woodruff indicates that through personal interaction with something in the environment, the individual gets a mental impression of it.³⁸ This is a percept and the initial step in concept formation. The individual recognizes the presence of the phenomenon and then proceeds to an abstraction of the event. The process of abstraction involves the linking of one sensory experience to another during which some details become dominant. The final act is one of generalization by which the dominant detail resulting from the abstraction forms the basis for responding in like manner to objects or events linked to the abstraction.

Brandwein, Watson and Blackwood see problem solving as the act of seeking concepts. The individual encounters a situation which he cannot interpret correctly on the basis of previously established concepts.³⁹

³⁶Berger and Baumel, p. 19.

³⁷Flavell, Ch. 3.

³⁸Woodruff, p. 72.

³⁹Paul F. Brandwein, Fletcher G. Watson and Paul E. Blackwood, Teaching High School Science: A Book of Methods (New York: Harcourt Brace and Co., 1958), pp. 28-30.

He discerns the necessity of reducing the event to a concept and proposes hypotheses; explanations are tested and evaluated in the light of available facts. Generalizations or conclusions are drawn which seem supported by the inquiry and which establish a particular category into which the event can be placed.

While this procedure presents a very logical arrangement, the evidence indicates that concept attainment does not follow any such ordered sequence at all times. In describing intuitive thinking, Bruner postulates that learning may sometimes come in a flash of insight.⁴⁰ Likewise, Brandwein, Watson and Blackwood refer to the "Eureka" or sudden flash in concept formation. They point out that concept attainment is not as often as we think the result of the conscious step-by-step process in which the concepts yield to irresistible logic and investigation.⁴¹ Burton, Kimball and Wing lend support to this viewpoint when they propose that concepts are not achieved quickly or at a given time.⁴² Concepts are achieved through an active, dynamic process, not through a formal or so-called "logical" process.

In relation to mathematical concepts, Piaget contends that to a remarkable degree the child develops them independently and spontaneously and only when there is sufficient mental maturity.⁴³ Butts,

⁴⁰Bruner, p. 13.

⁴¹Brandwein, Watson and Blackwood, p. 119.

⁴²Burton, Kimball and Wing, Ch. 9.

⁴³Jean Piaget, "How Children Form Mathematical Concepts," Reprint from Scientific American, November, 1953.

however, has questioned the adequacy of independent manipulation of data in concept development.⁴⁴ He studied the concept development of twenty fourth, fifth and sixth grade students in an after-school science class and concluded that when concept development was dependent solely upon a non-directed individual manipulation of data of a science experience, significant concept development was found in only one of four concepts.

It seems reasonable to assume that intellectual ability and concept attainment would be closely related. Present data, however, appears inadequate for revealing a consistent relationship. Results of Osler and Fivel's research reported by Sigel indicates that efficiency of concept attainment is associated with high I.Q.⁴⁵ While students of average ability do acquire concepts, they do so less readily than those with greater intellectual ability. There is also some indication that the child with a higher I.Q. employs cognitive processes of a higher level than those found in the cognitive style of the child with lesser ability. A group of children with an average I.Q. of 121 was found, according to Sigel, to try out hypotheses in learning concepts, while there was no indication the process was employed by a group whose I.Q. averaged 101. Butts, however, reported no significant relationship between tested intelligence and concept development in science.⁴⁶

Butt's study attempted to discover other factors related to

⁴⁴David P. Butts, "The Degree to Which Children Conceptualize from Science Experience," Journal of Research in Science Teaching, Vol. 1, June, 1963, p. 143.

⁴⁵Sigel, pp. 237-238.

⁴⁶Butts, pp. 135-143.

concept development. He found no significant relationship between science achievement scores or chronological age and the development of concepts in science by fourth, fifth and sixth graders. He also failed to find any orderly improvement in conceptual understanding between concepts. Thus it appeared that the development of one concept did not aid the individual in developing another concept.

Language seems to influence the acquisition of concepts. Sigel notes that according to some theorists it is the key determinant of the developmental sequence of concept attainment and thought in general.⁴⁷ Language facilitates and directs the categorization process and provides tools by which the individual identifies commonalities. Thus the acquisition of verbal skills may increase the quality and quantity of an individual's concepts and may facilitate application of the concepts by providing a more coherent, stable, cognitive organization. Piaget has recognized the importance of experience and its qualitative aspect in concept development.⁴⁸

While the individual's utilization of experience is dependent upon his structural and functional make-up and upon his developmental level, a variety of relevant experiences appear to facilitate the attainment of a concept.

The foregoing processes cited in the literature reviewed above as characterizing concept development seem to suggest that conceptualization of students:

⁴⁷Sigel, p. 223.

⁴⁸Flavell, pp. 367-368.

1. Varies with intellectual ability. (The higher the I.Q., the higher the levels of cognition utilized.)
2. Is influenced by the student's linguistic ability.
3. Varies with the quality of learning experiences.
4. Is more likely to occur when students are exposed to a variety of learning experiences.
5. Is dependent upon the developmental level of the student.
6. May, in terms of mental maturity, involve at the college level, making inferences, creating and evaluating hypotheses and deducing logical conclusions.
7. May result when the problem solving approach is used in teaching.
8. Is influenced by a variety of factors.
9. Cannot be fully controlled by the teacher. (Teaching, however, can be structured in a way that the student will have opportunities, materials and the desire to acquire concepts.)

The Concept Approach to Teaching

Several writers have discussed the processes involved in the concept approach to teaching. Woodruff states that teaching is simply the process of causing students to go through a learning process which is psychologically correct for the thing to be learned.⁴⁹ For the learning of concepts, Woodruff concludes, the process includes seeing or perceiving a referent, thinking about it until the concept is clear

⁴⁹Woodruff, p. 38.

and then trying out the implications of the new concept until its values become apparent.⁵⁰ These are processes the learner must go through. The learning has to be done by the pupil. Therefore, it is the pupil who has to be put into action. Tyler supports this view when he proposes that effective learning is an active endeavor on the part of the learner and what becomes a part of him is what he has actively formulated, responded to or used in some way that is relevant.⁵¹ Central to concept teaching, then, is the organization of content and the planning of learning experiences.

In relation to the organization of content, Tyler asserts that each field of knowledge has developed as an organized structure, not just as a miscellaneous collection of facts.⁵² To understand a subject, then, is not to remember thousands of specific, unrelated facts but to learn concepts and principles with related facts that help explain and give meaning to the subject. New courses in mathematics and physics, for example, utilize only a relatively small number of concepts. Tyler notes, however, that the structure of a subject usually includes some other elements in addition to concepts. There are principles which show relationships among observed facts. Each principle serves to summarize a large number of specific facts, hence to understand a principle is to comprehend a great deal of material.

Tyler cautions against the danger that students will treat principles as empty forms and try to memorize them without comprehending the

⁵⁰ Ibid., Ch. 5.

⁵¹ Ralph W. Tyler, "The Knowledge Explosion: Implications for Secondary Education," The Educational Forum, Vol. 29, January, 1965, 145.

⁵² Ibid., p. 149.

specific matters to which they relate.⁵³ This, he suggests, can be avoided by having the student formulate the principle in his own words as he attempts to generalize the relationships he finds from the concrete cases which he encounters and by asking him to give illustrations of the principle whenever he states it. In summary, Tyler concludes that in every course the student should be able to answer the following:

1. What kinds of questions does this subject seek to answer?
2. What kinds of methods does it use to study these questions?
3. What concepts are basic in this subject to give order and meaning to specific data?
4. What generalizations are being obtained and what are illustrations of the specific items to which these generalizations apply?
5. How can this subject be used in my daily life?⁵⁴

Considering the matter of efficient learning, Tyler clearly delineates certain conditions that should be adequately met.⁵⁵ First, the learner must carry on the behavior he is to learn. In the final analysis it is not what the teacher does, but what the learner does, which determines learning. If the student is to gain understanding, he must carry on the intellectual behavior involved such as explaining relationships, comparing and contrasting concepts and predicting consequences. Learning not only requires the learner to carry on the behavior he is to learn but he must also find it rewarding. Whatever the form

⁵³ Ibid, p. 148.

⁵⁴ Tyler, p. 150.

⁵⁵ Ibid., pp. 151-152.

of teaching and learning used they must enable the student to carry on the behavior he is to learn and they must enable him to obtain satisfaction carrying on the behavior successfully.

Another condition suggested by Tyler is that the student must find his previous ways of reacting unsatisfactory so that he is stimulated to try new ways. It is necessary for the teacher to help the student discover that his earlier point of view is not a satisfactory one on which to develop new skills. The student must, also, have some guidance in trying to carry on the new behavior he is to learn. If the new behavior is attempted through trial and error the process may be slow and discouraging. It is helpful if the teacher demonstrates what the learner is to do and shows how the subject is attacked. These conditions Tyler believes to be among the most important ones having an influence on the effectiveness of learning. He concludes:

Careful efforts to provide and maintain these conditions would increase greatly the effectiveness of our educational programs at a time when the total educational job is so great that every means to improve learning should be utilized.⁵⁶

While the foregoing discussion provides a useful framework for evaluating effective teaching and learning, it seems essential to explain more specifically the process of concept teaching. Otto outlines five steps involved in the concept approach to teaching:

1. Identifying behavioral objectives.
2. Identifying and selecting concepts or generalizations which serve as background knowledge to achieve behavioral objectives.
3. Listing and documenting background factual information

⁵⁶Tyler, p. 152.

necessary to help the learner understand concepts and their relationships.

4. Devising learning experiences which enable the learner to recognize relationships among concepts and give meaning to factual information.
5. Formulating, by students, of generalizations in their own words.

This last step, Otto suggests, may be brought about by the teacher asking simple, thought-provoking questions or devising additional learning experiences.⁵⁷

The process of concept teaching is viewed by Berger and Baumel as entailing the following procedures:

1. Determining previous experience of the learner. The teacher should know if the student can associate the new situation with previously established categories.
2. Presenting the situation in such a way that the student desires to reduce the event to a concept. No concept formation will result if the student does not feel a need for it.
3. Allowing the student to propose hypotheses and explanations. Each student should participate in abstracting observed phenomena. The teacher should elicit as many different ideas as possible.
4. Interpreting the observed event in light of suggested hypotheses and eliminating those hypotheses which do not apply.

⁵⁷Otto, "A Case for Home Economics Concepts Implementation," (Speech presented at American Vocational Association Convention, Teacher Education Section Meeting, Atlantic City, New Jersey, December, 1963).

5. Developing the proper explanation for one event. Generalization through class discussion will establish a particular category into which the event can be placed. The student then should be able to identify similar events as part of the general category and the concept will become clearly fixed in mind.⁵⁸

Berger and Baumel note that the nature of the learning experience itself, whether visual or entirely verbal, will affect the time in which the concept will be attained. If the attributes of a category can easily be verified, the concept will be developed with optimum efficiency.

Brandwein, Watson and Blackwood suggest that the teacher proceed in concept teaching as follows:

1. Set up learning situations in which student readiness is tested.
2. If existing concepts are not sufficient to interpret the situation properly through correct responses, the class seeks to set up problems which help them get the concepts by which they can respond correctly. A correct response builds up or reaffirms the concept.
3. The teacher then develops new learning situations to build further concepts toward a conceptual scheme, through appropriate problem seeking and solving.⁵⁹

According to these authors concept formation is at the center of the teaching process and problem solving is the method of seeking and

⁵⁸Berger and Baumel, p. 19.

⁵⁹Brandwein, Watson and Blackwood, pp. 117-118.

attaining concepts.

Further clarification of the process of concept teaching is provided by Burton, Kimball and Wing.⁶⁰ Learning situations, they contend, should be provided to make it possible for learners to come in contact with numerous and vivid, clear-cut examples of things, persons, processes and relationships for which concepts are being achieved. The examples of things, persons, processes and relationships should be met so far as possible through direct experiences. The direct experiences should be supplemented by vicarious experience obtained by means of motion pictures, radio and televised programs, dramatizations, lectures and types of printed material.

The general consensus appears to be that teaching procedure markedly influences concept formation. Berger and Baumel in studying the effect of different learning methods on concept formation, concluded that only through concentrated effort aimed at concept development can the teacher expect to achieve that end.⁶¹ In a comparison of a functional condition of concept learning and a rote condition using the Hanfmann-Kasanin Block Test, when outcomes were measured in terms of retention and demonstration of a meaningful grasp of acquired concepts, Carpenter found functional learning of concepts more efficient.⁶² The functional method utilized problem solving while the rote learning involved factual information given by lecture without unifying explanations. In

⁶⁰Burton, Kimball and Wing, p. 163.

⁶¹Berger and Baumel, p. 19.

⁶²Finley Carpenter, "The Effect of Different Learning Methods on Concept Formation," Science Education, Vol. 40, October, 1956, pp. 282-285.

educational implications based on the study, Carpenter suggested that transfer of learning cannot be handled by assumption but must be a definite part of learning experiences so long as application is a course objective.

Woodruff has identified the tendencies which he believes characterize teaching aimed toward concept development.⁶³ Such teaching, he proposes, tends to concentrate on one vital idea and produces sharp mental pictures of that one thing. The required learning experiences are sharply defined and the essential teaching materials are identified. In concept teaching, the facts are selected and organized into a significant idea and everything is aimed at an important generalization. The comprehension of the concept itself becomes the objective which may be approached through a series of supporting ideas or sub-concepts.

One might conclude from the review of literature that concept teaching differs from teaching centered on topics or based on material as often organized in texts. Concept teaching involves problem solving: (a) it follows a series of steps which are clearly defined; (b) it requires discrimination in the organizational structure of content and learning experiences; (c) it is aimed at teaching one main concept or basic idea. The final result is a significant generalization of high validity and broad applicability.

More specifically, effective concept teaching involves the following processes:

⁶³Woodruff, p. 185.

1. Identification or formulation of objectives stated in terms of the specific behavior desired.
2. Engagement of the student in direct action with the subject matter content. The learning has to be done by the student.
3. Organization of course content based on concepts, generalizations and principles.
4. Formulation and illustration of principles by the students, and opportunities for application of principles.
5. Explanation of relationships, comparison and contrast of concepts and prediction of consequences by the learner.
6. Awareness of students of the need for increased understanding of concept. Concept seeking begins with the realization that the concept in hand is not adequate to fit observed events.
7. Skill and guidance by the teacher in the process of conceptualization.
8. Problem solving which entails a clear statement of the problem to be explored, development and testing of hypotheses, gathering and analyses of data, and interpretation of the event in light of available data.
9. Learning experiences, varied, direct and vicarious, which enable the learner to experience examples of things, persons, processes and relationships for which concepts

are being achieved and which provide opportunities for the application of principles and generalization.

10. Teaching procedures and materials clearly defined and aimed toward teaching each significant concept.

Evaluation of Conceptual Understandings

It is assumed that the concept approach to teaching will result in the acquisition of conceptual understanding on the part of the students. It is also assumed that through exposure to appropriate learning experiences related to the concepts students will learn to conceptualize.

If education is conceived as a process that seeks to change the behavior of the student, these changes in behavior, i.e. increased understanding of concepts and ability to conceptualize, then constitute two of the educational objectives which form a basis for concept teaching. In order to judge the effectiveness of the concept method of teaching, it is necessary to measure the end result of the process. According to Ahmann and Glock, two of the purposes of educational evaluation applicable to the present study are (1) to help the teacher to determine the degree to which educational objectives have been achieved and (2) to help the teacher know his students as individuals.⁶⁴

The first aspect of evaluation is that of defining objectives: Ahmann and Glock suggest that objectives be stated in terms of behavior the student should exhibit if he has achieved certain objectives.⁶⁵

⁶⁴Stanley J. Ahmann and Marvin D. Glock, Evaluating Pupil Growth, (Boston: Allyn and Bacon, Inc., 1963), p. 6.

⁶⁵*Ibid.*, pp. 7-8.

For example, an objective concerning ability to conceptualize might be expressed as follows: "The students can formulate accurate generalizations based on learning experiences relating to concepts studied." Similarly, objectives concerning the attainment of conceptual understandings by students may be stated as:

1. The student can define concepts.
2. The student can see relationships among ideas and understand cause-and-effect relationships.
3. The student can analyze data, draw conclusions and apply principles to specific situations.

Woodruff, however, contends that the simplest way to state an objective is to write out the concept statement if the objective is a concept.⁶⁶ The following is an example of a concept objective:

The major concept: The quality of interpersonal relationships in dating, in the family and in other relationships is greatly influenced by the degree to which the empathic process is involved.

In essence, Woodruff seems to take the position that it can be assumed that the teacher wants his students to acquire the concept or develop an understanding of it. He notes that the objective will have been reached when the student understands the concept.⁶⁷ The two views concerning statement of objectives do not appear to be incompatible. Stating the objectives in behavioral terms, however, may make the objectives more explicit and may more readily suggest means of determining the degree to which they have been met.

⁶⁶Woodruff, p. 32.

⁶⁷Ibid.

After objectives have been stated it is necessary to select possible situations in which changes of behavior may be observed. Once this is done evaluative procedures can be developed. It is assumed that conceptual understandings may exist at different levels in terms of degree of complexity or cognitive processes involved. Bloom has identified six levels of understanding and suggested appropriate evaluation procedures for each level.⁶⁸ His hierarchy of understanding progresses from knowledge which may involve simply the recall of specific facts to evaluation which includes prediction and judgment concerning materials and methods appropriate for given purposes. In evaluating conceptual understandings, then, it would seem desirable to develop procedures designed to measure the degree or level of understanding the student has in relation to a given concept.

Evaluation is an integral part of the learning process. When a student formulates principles and attempts to generalize relationships he finds from learning experiences encountered, he learns to conceptualize. At the same time, the principles or generalizations formulated by the student are indicative of his understanding of the concept. If the student is asked to illustrate the principle stated it is possible to determine the extent to which he comprehends the specific matters to which they relate. During the process he learns to apply the principle to specific situations.

Validity and reliability are two important characteristics of evaluative instruments. Of the two, Ahmann and Glock contend that

⁶⁸ Benjamin S. Bloom, Editor, Taxonomy of Educational Objectives, (New York: Longmans, Green and Co., 1956), pp. 201-207.

validity is clearly the more important.⁶⁹ One can readily see the rationale behind this observation. Validity indicates the degree to which an evaluation device serves the purpose for which it is intended or measures what it is designed to measure. Unless an evaluation instrument measures what it is supposed to measure it is of little value irrespective of the degree of reliability.

Content validity refers to the degree to which the content of an instrument adequately samples certain types of situations or subject matter.⁷⁰ Thus an instrument to have content validity must include a cross sectional sampling of subject matter content the students are expected to understand. If the sample is not representative, the test lacks content validity.⁷¹ In relation to determining content validity, Ahmann and Glock note that if the teacher who conducts the class also constructs the achievement test this tends to assure content validity. For this reason the degree of content validity of carefully constructed informal achievement tests tends to be greater than that of standardized achievement tests. Such informal tests are sometimes accepted on "face validity." It is also wise to use a variety of evaluation devices in view of the fact that comprehensive evidences of student behavior can better be obtained from a number of situations and different techniques are needed to evaluate various objectives and get an adequate sampling of behavior.

⁶⁹Ahmann and Glock, p. 292.

⁷⁰ibid., p. 294.

⁷¹ibid., p. 295.

Reliability refers to the extent to which an evaluation device can be used repeatedly in an unchanging situation and produce constant or near constant results.⁷² Chance errors render all evaluation instruments unreliable to a degree. Scoring unreliability is another limitation of some evaluation devices. Essay type responses are particularly susceptible to such an error. Assigned scores may vary when more than one individual does the scoring as well as when the same person scores all responses. Reliability may be increased by structuring the essay question and using a well defined criteria for evaluating responses. Objective tests are less susceptible to a scoring error. A coefficient of reliability for an evaluation instrument may be derived through various procedures.⁷³

Test items should be constructed on the basis of the level of behavior to be measured and the educational level of the student. The teacher may wish to measure behavior at the performance level, situational level or the factual or recall level depending upon educational objectives being evaluated. The mechanics of the test should be such that they are comprehensible to the student.

In relation to evaluating conceptual understandings, it seems desirable for evaluation devices used to:

1. Be designed to measure the degree of attainment of educational objectives.
2. Be designed to measure different levels of conceptual understanding.

⁷² Ibid., p. 323.

⁷³ Ahmann and Glock, p. 326.

3. Include a variety of measurement techniques.
4. Be incorporated as an integral part of concept teaching.
5. Have content validity.
6. Contain items constructed on the basis of the behavior to be measured and the educational level of the student.

Summary

The importance of conceptual development has long been recognized. The conceptual development of an individual influences his behavioral response, his effectiveness in relating to the environment, his ability to organize experiences and solve problems and his level of thinking.

Concepts as a basis for curriculum development and effective learning delineate the fundamental ideas in a given area of knowledge, organize, unify and show relationships among facts, principles and experiences, facilitate transfer of learning and provide a frame of reference for thinking and future action.

Cognitive development is slow, gradual, continuous and involves such processes as organization, adaptation, assimilation and accommodation. Through these processes concepts or cognitive structures are modified, sharpened, expanded and integrated. Thus cognitive development is an active process which involves thinking and demands an active organism. Essentially it is the process of acquiring cognitive structures which organize and give meaning to past experience and provide the basis for present and future experiences. The constant elements in cognitive development are the mental operations involved in the development of cognitive structures or concepts.

Concepts are acquired through a variety of processes which are perhaps neither smooth nor sequential.. These processes include perception, discrimination, assimilation, accommodation and generalization. The individual perceives an event, internalizes and organizes it within a conceptual framework and relates it to objects, things or processes linked to the event. These processes may be formalized in the act of problem solving or if one prefers, the scientific method, in which case the individual encounters a situation he cannot handle effectively on the basis of his present conceptual structures, recognizes the need for expanding his concepts, collects and analyses relevant data and reaches conclusions or formulates generalizations which explain the situation and make it meaningful. When concepts appear to occur intuitively, the learner usually has a rich background of knowledge related to the concept.

Concept development appears to be related to several factors. Intelligence has been found to influence the efficiency of concept attainment and the cognitive processes utilized to gain a concept. The learner with the higher I.Q. acquires concepts more readily and uses more difficult thinking processes. Language and experiences also influence the quality and quantity of an individual's concepts. The learner with greater linguistic ability acquires higher level concepts with greater facility than the learner with less linguistic skill. A variety of experiences relevant to a concept facilitates acquisition of the concept. Level of mental maturity has also been found to influence the development of cognitive structures. Only the learner

who is mentally mature is capable of the highest level of conceptualization and the development of more complex conceptual structures. While evidence indicates that certain factors are related to concept development, more extensive research is needed to determine the nature of the relationship and to identify other factors that might be related to concept attainment.

To assure the attainment of concepts specific teaching procedures are recommended. The area of knowledge to be taught is organized on the basis of fundamental concepts and learning experiences are designed to teach each concept. In the organization of learning experiences, the student's understanding of the concept is determined and he is made aware of the need for further concept development. In the process of acquiring a concept the students gather relevant data, compare and contrast ideas, seek explanations of relationships and predict consequences of certain actions. The learner then formulates and illustrates principles and generalizations and opportunities are provided for applying them to specific situations. Certain conditions for effective learning are essential in concept teaching as well as in other types of learning situations. The principles which are generally suggested in relation to evaluating pupil growth apply to the evaluation of conceptual understanding.

On the basis of the review of literature one may conclude that concept development:

1. Is an important factor in human behavior.
2. Is encouraged by certain teaching-learning and evaluation procedures.
3. Leads to effective teaching.

4. Occurs more readily when students are exposed to a variety of learning experiences.
5. Varies in quantity and quality from one individual to another.
6. May be influenced by intelligence, linguistic ability, mental maturity and learning experiences, formal and informal.

These conclusions suggest four areas of concern in teaching for concept development: (1) the organization of knowledge in a given area, (2) the organization of learning experiences in relation to a specific concept, (3) the provision of meaningful learning experiences for students with varying abilities and backgrounds and (4) the evaluation of conceptual understandings held by the students. In the absence of substantial research in the concept approach to teaching the need for comprehensive investigation and research in relation to effective teaching and evaluation procedures, the process of conceptualization and factors influencing concept development becomes apparent.

CHAPTER III

PROCEDURE AND METHOD

Selection of Content

The present investigation was an attempt to determine if selected teaching methods and other selected factors are related to the development of conceptual understandings in family relationships by college students. One major concept, Interpersonal Relationships, was taught to two freshmen level classes at Arizona State University during the fall semester of the 1965-66 school year. Learning experiences in relation to this concept were organized around four sub-concepts which were thought to constitute elements of Interpersonal Relationships: (1) Empathic Ability, (2) Respect for the Worth and Dignity of the Individual, (3) Healthy Concept of Self and (4) Communication.

The major concept was chosen because of its broad applicability to personal and family life, its relations to the general well-being and self-actualization of individuals and its basic importance to success in the small, nuclear family of today as well as to successful functioning in the American society of today. Reisman, Glazer and Denny depict the "lonely crowd" as symbolic of our society today and suggest that we are lonely in the midst of a crowd as long as our relationships with others are restricted and segmental.¹ Blood

¹David Reisman, Nathan Glazer and Revel Denny, The Lonely Crowd (New Haven: Yale University Press, 1961).

observes that only when we are able to establish a fully personal relationship with another individual do we escape the sense of estrangement that so often afflicts modern man.² The need for affiliation is intrinsically met by personal relations in marriage and friendship. Being able to establish satisfying personal relations is especially important in family life as marriage today is essentially personal relationships.

Obviously there are many sub-concepts which contribute to an understanding of interpersonal relationships, especially within the family context. Four were selected for the present study. These were selected on the basis of their broad applicability, their suitability for a freshman level course and their relationship to the objectives of the course, "Personal Adjustment for Family Living." Also, each is considered basic to the development of a mature personality, interpersonal competency and effective personal relationships.

Empathic Ability and Communication refer essentially to skills or abilities which function in personal interaction, while Respect for the Worth and Dignity of the individual and Healthy Concept of the Self are attitudes or feelings which function as part of the personality structure and influence the individual's ability to relate effectively to others. All four aspects of interpersonal relations are basic to successful personal adjustment and effective interaction both within the family context and in relation to individuals and groups outside the family with whom a person interacts. These sub-concepts were considered suitable for the academic level of the course inasmuch as pilot work with previous classes indicated freshmen students possess the mental maturity

²Robert O. Blood, Jr., Marriage (New York: The Free Press of Glencoe, 1962), p. 6.

and social and psychological insight necessary for the development of conceptual understandings in these areas.

Other concepts basic to an understanding of behavior dynamics and family interaction such as Idealization, Identification and Emulation, as discussed by Mowrer,³ appear to the writer to require an increased understanding of psychological theory and human behavior and are more appropriately taught in an upper division course after the students have completed basic requirements in psychology, sociology and other related disciplines. The research of Piaget and others indicates the advisability of giving careful consideration to the sequence of concepts in the teaching-learning process. In the absence of research related to the present study, the sequence for teaching the concepts was based on the judgment of the investigator, who has had substantial experience in teaching family relationships at the college level and some education in this area, in consultation with other experienced teachers in the area and an analysis of texts used at different levels in the teaching of family relationships.

Interpersonal Relationships, as defined in the present study, refer to interactions, mutual or reciprocal relationships, among individuals in various situations. It is assumed that the actual unity of family life has its existence in the interaction of its members. Empathic Ability, as an element of personal interaction, is conceived as the capacity for role taking which involves the ability to place oneself in another person's position and perceive accurately how he feels. Empathy

³Harriet R. Mowrer, "Getting Along in Marriage," Family, Marriage and Parenthood. Edited by Howard Becker and Reuben Hill (Boston: D. C. Heath and Co., 1955), pp. 348-349.

results from an interplay of two factors: (1) that brought to the situation by the individual and (2) characteristics of the situation. It emerges from an interrelationship of the individual and the situation. Vernon and Stewart contend that the empathic process has a crucial influence upon the outcome of any social situation.⁴

Communication, as another element of interpersonal relations, refers to the ability to make oneself known to another, to express one's needs, thoughts and feelings in a meaningful way as well as the ability to listen to and understand others. In personal interaction it denotes the ability "to share in," "to use or enjoy" ideas in common with others. It is a two-way process which implies a willingness to participate fully in a relationship. Like empathy it brings about increased understanding and knowledge among people and can be developed through effort and practice. Jourard considers communication an essential element of healthy interpersonal relationships.⁵ He maintains that in a healthy relationship each partner can communicate honestly his thoughts, feelings, beliefs and opinions to the other and does so. Neither partner is defensive and each feels free to say what he wants. Each wants to be known by the other and strives to make himself known.

Respect for the Worth and Dignity of the Individual is used to denote the attitude of unconditional acceptance of others or accepting them on the basis of who they are rather than what they are. It implies

⁴Glen M. Vernon and Robert T. Stewart, "Empathy as a Process in the Dating Situation," American Sociological Review, Vol. 22, February, 1957, p. 48.

⁵Sidney N. Jourard, Personal Adjustment (New York: The MacMillan Co., 1958), p. 312.

an awareness of individual differences, a genuine concern for humanity, the ability to see a person as he is and to value his uniqueness and individuality. Moustakas maintains that unless a person's "who-ness" is respected and his individuality treasured his real nature may be distorted and human understandingness impossible.⁶ Fromm considers respect for the individual an essential element of a healthy, meaningful love relationship.⁷

A Healthy Concept of Self involves: (1) self-understanding and acceptance, (2) a positive, realistic self-image, (3) freedom to be oneself, (4) openness to experience, (5) trust in one's organism and (6) internal consistency. In relation to personal interactions the importance of a healthy concept of self becomes readily apparent when one considers Rogers' self-theory which holds that if a person thinks well of himself he is likely to think well of others.⁸ Fromm proposes that love for one's self is inseparably connected with love for any other self.⁹ The person with a healthy concept of self is believed to be more open to experience. Openness to experience may be conceived as the opposite of defensiveness. A defensive person, for example, finds it difficult to commit himself fully to a personal relationship or to experience deep, profound, meaningful interpersonal relations.

⁶Clark E. Moustakas, Editor, The Self, (New York: Harper and Row, 1956), p. 4.

⁷Erich Fromm, The Art of Loving (New York: Harper and Row, 1956), p. 26.

⁸Calvin Hall and Gardner Lindzey, Theories of Personality (New York: John Wiley and Sons, Inc., 1957), Ch. 12.

⁹Fromm, p. 59.

Measuring Conceptual Understandings

Conceptualization and conceptual understandings were measured through the use of instruments developed by the investigator. The instruments were designed to measure the ability of students to:

1. Define concepts.
2. See relationships among ideas.
3. Understand cause-and-effect relationships.
4. Analyze data and draw conclusions.
5. Apply principles to specific situations.
6. State principles or generalizations based on learning experiences.

Selection of the above learning behaviors to be measured was based on the mental operations identified in the three levels of generalizations in concept development, in the cognitive processes described by Bloom,¹⁰ and in the processes associated with concept development as indicated in the review of literature. A device was used for measuring the student's conceptual understanding at the beginning of the teaching procedure for each concept.

The following measures of conceptual understanding were used:

1. Written responses in which the students were asked to formulate conclusions which they felt were justified on the basis of learning experiences. Duplicated forms for the written responses (Appendix A) were used in measuring the students' understanding of each concept upon completion of the classroom experiences designed to teach the concept. The

¹⁰Benjamin J. Bloom, Editor, Taxonomy of Educational Objectives (New York: Longmans, Green and Co., 1956).

responses were evaluated according to a rating scale

(Appendix B) based on the following criteria:

- (1) Level of generalization.
- (2) Correctness of generalization.
- (3) Relatedness of generalization to concept.
- (4) Adequacy of example of generalization.
- (5) Vocabulary.
- (6) Meaningfulness of generalization.

Each student's written response for each area studied in relation to each of the four concepts was rated according to a scale based on these criteria and the sum of the points received for all areas of concern constituted the student's total score for each concept. For example, in measuring the students' understanding of Empathic Ability they were asked to formulate conclusions in relation to the following five areas studied:

- (1) The development of Empathic Ability.
- (2) The Nature of Empathic Ability.
- (3) Traits Associated with Empathic Ability.
- (4) Factors that Block the Empathic Process.
- (5) The Importance of Empathy in Interpersonal Relationships and Family Life.

Responses to each of the five areas were evaluated according to the scale based on the above criteria and the points assigned to the five areas were then totaled for the students' scores on Understanding of Empathic Ability. The same procedure was followed in obtaining each student's score on each of the four concepts.

The rating of the responses was done by the investigator. As

a means of checking the judgment of the investigator in rating the responses, five papers from the first set of responses were selected at random and rated by two competent educators (college professors) in home economics education and family relationships. The writer's judgment was then checked against that of the other evaluators. There was agreement on the ratings except in determining the level of generalization. After some discussion and clarification of the three levels of generalizations, as defined in the present study, agreement was reached in this respect on subsequent ratings.

Each student's scores on the four concepts were totaled to obtain a Composite Concept Score as a measure of conceptual understanding.

2. A Definitions Test. This test (Appendix C) was administered the second week of the semester as a pre-test prior to the study of Interpersonal Relationships. It covered the four concepts: (a) Empathic Ability; (b) Respect for the Worth and Dignity of the Individual; (c) Healthy Concept of Self and (d) Communication. The tests were marked by the investigator and placed in the students' cumulative folders. At the culmination of the unit on Interpersonal Relationships, the test was again administered as a post-test, marked and the differences in the two scores computed. Students were awarded one point for each correct answer on Parts A, B and C. Finally, sub-scores were summed up to derive a total test score.
3. An Application of Principles Test. This test (Appendix D),

based on a case study, was designed to measure the higher levels of conceptual understanding and the more complex cognitive processes: application, analysis, synthesis and evaluation. It included items on the four concepts studied and was administered at the end of the unit on Interpersonal Relationships.

In the statistical computations Composite Concept Scores and Application of Principles Test Scores were used as measures of students' conceptual understanding when correlating it with other factors. The pre-test and post-test scores on the Definitions Test were used as an index of development of conceptual understandings by students.

Certain criteria were established as a guide for constructing the evaluation instruments. These criteria stipulated that the instruments must:

- (1) Have content validity.
- (2) Discriminate among the various cognitive processes to be measured.
- (3) Reflect the relative emphasis given to each concept.
- (4) Measure behavioral objectives that guide classroom instruction.
- (5) Be suitable for the educational level of the students.

The Measurement of Academic Ability and Personality Factors

To determine the relationship of academic ability to the development of conceptual understanding, scores on the American College Test (ACT) were obtained from the University Testing Center. Scores for 76 of the 131 students were available. As another index of academic ability the students' rank in high school graduating class was obtained

from the registrar's office. Ranks were indicated for 112 of the 131 students included in the study. These two measures appear to be widely used as indices of academic potential. Approximately 1,000 institutions of higher education administer the ACT.¹¹ Evidence suggests that the ACT score is helpful in evaluating the student's potential for achievement.¹² High school grades are also indicative of the student's academic potential in college. A report by the American College Testing Program, Inc., states:

Perhaps the most reliable research finding in education is that high school grades are predictive of college grades; further, that academic aptitude tests and high school grades combined are a better predictor of college grades than either alone.¹³

The Personal Orientation Inventory (POI) standardized on college freshmen, was used to evaluate personality factors that might be related to the development of conceptual understandings in family relationships. The POI was used because it was designed to measure elements of personality related to the four concepts taught. For example, the major concept was Interpersonal Relationships and one sub-scale of the POI was designed to measure capacity for intimate contact or the extent to which the individual has warm interpersonal relationships. Other sub-scales were designed to measure self-regard and self-acceptance. These seemed to be related to the concept, Healthy Concept of Self. It was conjectured that a person rating high in self-regard and self-acceptance might more readily develop conceptual understandings related

¹¹Using ACT on the Campus (Iowa City: The American College Testing Program, Inc., 1965-66), p. 10.

¹²Ibid., p. 36.

¹³Ibid., p. 5.

to Healthy Concept of Self. It was also considered a possibility that the degree to which a student approaches self-actualization might be related to his ability to conceptualize.

Subjects

The subjects who participated in the investigation were college students, predominately freshmen, enrolled in Sections I and II of Home Economics 132, Personal Adjustment for Family Living, at Arizona State University the fall semester, 1965-66. Included were majors in home economics and non-majors. A total of 131 students, 129 women and two men, participated in the study. Scores on every measure used were not available for all the students. Consequently the number (N) varies in the different statistical computations. American College Test (ACT) scores available for 76 of the students indicated a range of 7 to 30. The lowest possible standard score on the ACT is 1 and the highest possible standard score is 36. The median ACT score of freshmen in 44 colleges offering bachelor's, master's and doctor's degrees was 21.8.¹⁴ The median ACT score for the students in the present study was 20. Rank in high school graduating class was available for 112 students. Of this group 45 were in the upper quartile, 39 were in the next quartile, while the remaining 28 ranked in the lower one-half of their graduating class. Eight of the 28 were in the lowest quartile of their graduating class. Thus the students as a group appeared to be average or above in academic ability as measured by the ACT and Rank in Graduating Class.

¹⁴Using ACT on the Campus (Iowa City: The American College Testing Program, Inc., 1965-66), p. 16.

The Organization of Learning Experiences

A procedure for teaching each concept was developed (Appendix E). Essentially the organization of learning experiences was based on the problem solving method and included the processes involved in concept teaching as identified in the review of literature. Prior to the study of each concept a device was used to measure the student's present knowledge of the concept and to make him aware of the need for further understanding.* Brandwein, Watson and Blackwood contend that concept seeking begins with the realization that the concept in hand is not adequate to fit observed events. They note that casual observation and description is followed by recognition of those aspects which begin to seem important.¹⁵

An attempt was made to increase the student's awareness of the need to examine, extend and refine the concept. For example, at the beginning of the concept, Respect for the Worth and Dignity of the Individual, the students wrote a composition which included, "An Incident Showing Respect in Family Living," and "What Respect Means to Me." An analysis of the compositions indicated that most students viewed respect in a very limited sense, primarily as deference to authority or respect for privacy in the family. Other elements of Respect, such as valuing a person's uniqueness and giving him the freedom to grow and progress as an individual, were seldom mentioned.

*For Concept I, this device was an analysis of a case study; for Concept II, a composition; for Concept III, defining the concept; for Concept IV, analysis of a film.

¹⁵Paul F. Brandwein, Fletcher G. Watson, and Paul E. Blackwood, Teaching High School Science: A Book of Methods (New York: Harcourt Brace and Co., 1958), p. 21.

A discussion of the compositions stimulated interest and the students were able to state what they needed to know in order to increase their understanding of the concept. Thus a statement of the problem emerged. (In the problem solving approach a problem is usually defined as something to be explored. Emphasis is placed on the importance of a clearly stated problem). Aspects of the concept, Respect for the Dignity and Worth of the Individual, suggested for further exploration were:

1. What do people do when they respect the dignity and worth of the individual?
2. In what ways might respect relate to success in family relationships?
3. How can one develop an attitude of respect for individuals?
4. Why is respect important in interpersonal relationships?

Next in the organization of learning experiences was the gathering of data. Brandwein, Watson and Blackwood maintain that carefully gathered data are the bases on which explanations are built.¹⁶

Learning situations, according to Burton, Kimball and Wing, should be provided to make it possible for learners to come in contact with numerous and vivid, clear-cut examples of things, persons, processes and relationships and should be met so far as possible through direct experiences. The direct experience should be supplemented by vicarious experience obtained by means of motion pictures, radio and television programs, dramatizations, lectures and types of printed material.¹⁷

¹⁶Brandwein, Watson and Blackwood, p. 21.

¹⁷William H. Burton, Ronald B. Kimball and Richard L. Wing, Education for Effective Thinking (New York: Appleton-Century-Crofts, Inc., 1961), p. 163.

In keeping with these observations the students were exposed to several learning experiences sharply focused on the concept, Respect for Dignity and Worthy of the Individual. Woodruff notes that concept teaching tends to concentrate on one vital idea and produce sharp mental pictures of one thing. The required learning experiences are sharply defined and the essential teaching materials are identified. Accordingly, the students were assigned specific reading references. Five sub-groups were organized; each concerned itself with a specific problem.

Group I read the novel, To Kill A Mockingbird,* and selected from the book examples of behavior or other evidence, which indicated that the main character, Atticus Finch, respected his children and his fellow men. Group II analyzed a case study pointing out evidence of lack of respect in the dating relationship, how the lack of respect seemingly affected the people involved in the relationship and some conclusions that might be drawn from the case in relation to respect and successful interpersonal relationships. Group III presented a sociodrama involving respect. Group IV presented a discussion on what authorities say about respect in relation to interpersonal relationships. Group V observed, recorded and reported to the class incidents of respect shown by students, teachers, parents, husband, wife, etc. They recorded behaviors as they happened, explained specific behaviors which indicated respect, described the outcome of observed situations and formulated conclusions which seemed justified on the basis of the experiences. A teacher-led discussion followed each group presentation.

* Harper Lee, To Kill A Mockingbird (New York: J. B. Lippencott Company, 1960).

Students were then asked to write statements, in the form of principles or generalizations, which were meaningful to them concerning respect and interpersonal relationships. Burton, Kimball and Wing¹⁸ and Tyler¹⁹ note that concept learning is enhanced when students have the opportunity to state their understanding, i.e., meaning growing into the concepts, in their own words.

Finally, the students prepared a written analysis of the film, "Preface to Life," which portrayed the effects of an overly solicitous mother and overly demanding father. Contrasted with this situation, as portrayed in the film, is a healthy childhood resulting from mutual acceptance and respect of both parents for a child as an individual. In analyzing the film, students identified principles related to the concept that had been delineated in previous learning experiences, the effect of respect or lack of it on the child or on the husband-wife relationship and techniques of child rearing which indicated respect for the child as an individual. Tyler contends that if the student is to gain understanding, he must carry on the necessary intellectual behaviors such as explaining relationships, comparing and contrasting concepts and predicting consequences.²⁰

The teacher guided the students in formulating generalizations, analyzing case studies and films and in drawing conclusions based on the learning experiences. Tyler observes that the student must have

¹⁸Burton, Kimball and Wing, p. 163.

¹⁹Ralph W. Tyler, "The Knowledge Explosion: Implications for Secondary Education," The Educational Forum, Vol. 29, January, 1965, p. 150.

²⁰Ibid., p. 151.

some guidance in carrying on the new behavior he is to learn.²¹ In this study this behavior was the process of conceptualization. If the new behavior is attempted through trial and error, Tyler proposes, the process may be slow and discouraging. Thus the teacher often illustrated what the learner was to do, as in group work, and how the problem was to be attacked.

At the culmination of the learning experiences students were given a duplicated form (Appendix A) on which they formulated generalizations relating to various aspects of the concept. These written responses were made during the regular class period.

Learning experiences for the other three concepts were clearly defined and organized in a similar manner.

Statistical Procedures

The relationship of academic ability to the attainment of conceptual understandings was determined by the use of the Pearson product-moment coefficient of correlation. The formula used was:²²

$$r_{xy} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{[N \sum X^2 - (\sum X)^2] [N \sum Y^2 - (\sum Y)^2]}}$$

The resulting coefficient of correlation is a single value indicating the extent to which two variables are related. It represents the extent to which changes in academic ability are accompanied

²¹ Ibid., p. 152.

²² James E. Wert, Charles O. Neidt and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York: Appleton-Century-Crofts, Inc., 1954), p. 83.

by equal changes in ability to conceptualize. The size of the coefficient is indicative of the strength or closeness of the relationship. The larger the coefficient the more likely there is a real relationship between the variables.

Coefficients of correlations were computed for the following sets of data:

Scores on Application of Principles Test and American College Test (ACT) Scores.

Scores on Application of Principles Test and Rank in High School Graduating Class.

Composite Concept Scores and ACT Scores.

Composite Concept Scores and Rank in High School Graduating Class.

Academic ability was measured by ACT Scores and Rank in High School Graduating Class. Ability to conceptualize was measured by Application of Principles Test Scores and Composite Concept Scores (a total of the scores for the four concepts). See Appendix F.

Another aspect of the study was to determine the relationship of personality factors to ability to conceptualize. The Pearson product-moment coefficient of correlation was used for this purpose. Coefficients of correlations were computed for the following sets of data:

Personality Orientation Inventory Scores and Application of Principles Test Scores.

Personality Orientation Inventory Scores and Composite Concept Scores.

Sub-scale scores on each of the following: Inner-Directed, Existentiality, Spontaneity, Self-Acceptance, Self-Actualizing Value,

Feeling Reactivity, Self-Regard and Capacity for Intimate Contact were paired with the Application of Principles Test Scores and the Composite Concept Scores.

To determine the extent to which the students developed conceptual understandings the Wilcoxon Matched-Pairs Signed Ranks Test was used.²³ This technique utilized the following formula:

$$Z = \frac{T - \frac{N(N+1)}{4}}{\sqrt{\frac{N(N+1)(2N+1)}{24}}}$$

The data used were pre-test, post-test scores on a Definitions Test. The Wilcoxon test is designed to determine the significance of the difference between the two sets of scores. In the present study it was used to determine if the post-test scores were significantly higher than the pre-test scores.

A nonparametric technique was employed because it does not require measurement as strong as a parametric test (at least interval level) and does not specify conditions about the parameters of the population from which the sample was drawn. It was recognized that the larger N in the present study would serve to increase the power of a non-parametric test. It was assumed that the variable under study had underlying continuity.

The Wilcoxon test may be used when the researcher can (a) determine the sign of the difference between any pair of scores and (b) rank the differences in order of absolute size. The test gives

²³Sidney Siegel, Non-Parametric Statistics (New York: McGraw-Hill, 1956), p. 81.

more weight to a pair which shows a large score difference than to a pair which shows a small score difference. The steps in the use of the Wilcoxon test are as follows:²⁴

1. For each matched pair, determine the signed difference (d_i) between the two scores.
2. Rank these d_i 's without respect to sign. With tied d_i 's, assign the average of the tied ranks.
3. Affix to each rank the sign (+ or -) of the d which it represents.
4. Determine T =the smaller of the sums of the like-signed ranks.
5. By counting, determine N =the total number of d_i 's having a sign.
6. If N is larger than 25, compute the value of Z as defined by the preceding formula. Determine its associated probability by referring to Table A. For a two-tailed test, double the p shown.

The Wilcoxon test was also used to determine the extent to which previous experience with the conceptual approach to teaching influenced subsequent development of conceptual understandings. The data used for this analysis were the students' combined scores on Concepts I and II and the students' combined scores on Concepts III and IV. The Wilcoxon test was then used to determine if the scores on Concepts III and IV were significantly higher than the scores on Concept I and II.

Other Procedures Used

To ascertain what teaching methods encourage the development of conceptual understandings, a variety of teaching techniques were used. At the culmination of the Unit on Interpersonal Relationships each student was asked to select the five methods he deemed most effective

²⁴Ibid., p. 83.

in helping him understand the four concepts taught. He then ranked the five methods from most to least effective. The most effective method was arbitrarily assigned a rank of five, the next ranked method was given a rank of four and so on for each of the five methods selected. Each time a method received a rank of 5 it was assigned five points; when the method was ranked 4, 3, or 2 it received four, three, or two points, respectively. A method receiving a rank of 1 received one point. The relative effectiveness of each method was inferred from the total points assigned to it. Each student was also asked to list the method he felt was least effective in helping him understand the concepts. The ineffectiveness of a method was inferred from the number of times a method was listed as least effective.

The present investigation was designed to give some indication of the amount of teacher guidance necessary for students to formulate appropriate generalizations from the selected learning experiences. Consequently, the amount of teacher guidance was systematically decreased as the group moved from one concept to another. For example, in Concept I the students were guided in the process of developing generalizations after each of five learning experiences. In Concept II the teacher guided the students in formulating generalizations after three of the learning experiences. In Concept III the students were guided in the process of generalizing after two learning experiences and in the final concept the students were given no guidance in formulating generalizations based on the learning experiences.

The present study was also designed to provide some insight into the number of encounters with relevant experiences necessary to insure the development of conceptual understandings. To get some measure of

this the number of learning experiences was decreased for each concept, I through IV, with the four concepts involving seven, five, four and three experiences, respectively.

Summary

During the fall semester (1965-66) a study was made of 131 college students enrolled in a freshmen level course, Personal Adjustment for Family Living, at Arizona State University. Major purpose of the study was to discover whether or not a systematic, organized approach to concept teaching in family relationships might result in the ability of college students to develop conceptual understandings. A secondary function of the study was to determine the degree to which certain personality factors and academic ability might be related to the development of conceptual understandings.

The major concept taught was Interpersonal Relationships. Learning experiences were organized around four sub-concepts: Empathic Ability, Respect for the Worth and Dignity of the Individual, Healthy Concept of Self and Communication. A procedure, based primarily on the problem solving method, was developed for teaching each concept.

Conceptual understandings were measured by a Definitions Test, an Application of Principles Test and a Composite Concept Score derived from totaling the scores on the four concepts. The Definitions Test was used as a pre-test and post-test. Academic Ability was measured by the American College Test (ACT) and Rank in High School Graduating Class.

Personality factors were measured by Shostrom's Personality Orientation Inventory designed to show the degree to which the

individual's attitudes and values compared with those of self-actualizing people. A self-actualizing person was conceived as one who develops and utilizes his unique talents to the fullest extent. The Inventory yields a total score, with twelve sub-scores. Eight of the personality factors measured by the sub-scales were considered germane to the present study. They were: Inner-directed, Existentiality, Spontaneity, Self-Acceptance, Self-Actualizing Value, Feeling Reactivity, Self-Regard, Capacity for Intimate Contact.

Pearson product-moment correlation coefficients were computed to determine the relationship of personality factors and academic ability to the development of conceptual understandings.

The Wilcoxon Matched-Pairs Signed Ranks Test was used to determine the significance of the difference between pre-test and post-test scores. The Wilcoxon test was also used to measure the significance of the difference between scores on Concepts I and II (combined) and scores on Concepts III and IV (combined).

This study was designed as an exploratory rather than a definitive study. Thus the major function of the statistical analysis was to identify relationships among the many variables which may later be studied in a more controlled manner. The study attempted to achieve new insights into the concept method of teaching as applied to family relationships in higher education. One of the research purposes of the study was to discover ideas and insights which might serve as a basis for the formulation of problems for more precise investigation at a later date. Consequently, the research design permitted consideration of several aspects of concept teaching.

CHAPTER IV

ANALYSIS OF DATA

The findings of the present research, based on a study of 131 college students to discover factors related to the development of conceptual understandings in family relationships, are presented in tabular form in Tables I through VII. Table I shows the development of conceptual understandings as measured by before and after Definitions Test Scores. The learning experiences employed for Concept I (Empathic Ability), Concept II (Respect for the Worth and Dignity of the Individual), Concept III (Healthy Concept of Self) and Concept IV (Communication) are presented in Table II while Table III shows the relative value of the learning experiences based upon student evaluations. Table IV indicates correlation coefficients between the following sets of data: ACT Scores and Application of Principles Test Scores; ACT Scores and Composite Concept Scores; Rank in High School Graduating Class and Application of Principle Test Scores; Rank in High School Graduating Class and Composite Concept Scores. Correlation coefficients showing the relationship between total scores obtained by the Personality Orientation Inventory (POI) and Application of Principles Test Scores and between total POI Scores and Composite Concept Scores are presented in Table V. Table VI shows correlation coefficients for each of the eight POI sub-scale scores, and Composite Concept Scores and scores derived from the Application of Principles

Test. Shown in Table VII is the increase in conceptual understanding as determined by a comparison of Concept Scores I and II with Concept Scores III and IV.

Student scores on the various measures are given in Appendix F.

Development of Conceptual Understandings

TABLE I

DEVELOPMENT OF CONCEPTUAL UNDERSTANDINGS AS MEASURED BY
BEFORE AND AFTER DEFINITIONS TEST SCORES

Class total	121
Number showing increased understanding	111
Number showing decreased understanding	7
Number showing no change in understanding	3
	$Z = -9.13^*$

*Wilcoxon Matched-Pairs Signed Ranks Test; significant beyond the .01 level.

A major concern of the present study was to determine if a systematic, organized approach to concept teaching in family relationships resulted in the ability of college students to develop conceptual understandings. The Z value, shown in Table I, was derived from the Wilcoxon Test and used to determine the significance of the difference between pre-test and post-test scores on the Definitions Test. The derived Z score of -9.13 was statistically significant beyond the .01 level of probability. On the basis of this finding it may be concluded that the learning experiences as organized in this study resulted in the development of conceptual understandings by college students, as

measured by pre-test and post-test scores. Further evidence of concept development was indicated by an increase in group mean from pre-test to post-test scores. The mean for pre-test scores was 11.15 as compared with 21.17 for the post-test scores. The pre-test range was 4 to 33, while the post-test scores ranged from 7 to 40 out of a possible 44 points.

While no comparable studies were found in the literature reviewed, a similar result was reported by Carpenter based on a study of the acquisition of concepts by college students comparing the relative effectiveness of a functional method of learning involving problem solving and rote learning which involved factual information given by lecture without unifying explanations.¹ He found that the functional method enabled the students to acquire a meaningful grasp of concepts and concluded that only through concentrated effort, aimed at concept development, can students attain concepts.

Results of the present study as well as the results of Carpenter's study seemed to support the assertions of Woodruff,² Tyler³ and Burton, Kimball and Wing⁴ that course content organized on the basis of

¹Finley Carpenter, "The Effect of Different Learning Methods on Concept Formation," Science Education, Vol. 40, October, 1956, pp. 282-285.

²Asahel Woodruff, Basic Concepts of Teaching (San Francisco: Chandler Publishing Co., 1961).

³Ralph W. Tyler, "The Knowledge Explosion: Implications for Secondary Education," The Educational Forum, Vol. 29, January, 1965, pp. 145-153.

⁴William H. Burton, Ronald B. Kimball and Richard L. Wing, Education for Effective Thinking (New York: Appleton-Century-Crofts, Inc., 1961), Ch. 9.

concepts, principles and generalizations provides a framework for organized learning experiences which will, when well defined and clearly related to the concept, give meaning to the subject and enable students to develop conceptual understandings. There was evidence to support the view that central to concept teaching is the organization of content and the planning of learning experiences.

Relative Effectiveness of Learning Experiences

TABLE II
LEARNING EXPERIENCES EMPLOYED FOR EACH OF FOUR CONCEPTS

<u>I</u> <u>Empathic</u> <u>Ability</u>	<u>II</u> <u>Respect for</u> <u>Worth of the</u> <u>Individual</u>	<u>III</u> <u>Healthy Concept</u> <u>of Self</u>	<u>IV</u> <u>Communication</u>
Individual reaction to case study	Composition on respect with discussion	Questionnaire on self, and discussion	Written analysis of film
Supervised reading	Supervised reading	Supervised reading	Supervised reading
Lecture	Group work	Group work	Analysis of tape (oral and written)
Discussion	Lecture- discussion	Analysis of case study	
Sociodrama	Written analysis of film		
Written analysis of case study			
Written analysis of film			

One of the objectives of the present study was to determine if selected learning experiences might encourage the development of conceptual understandings in family relationships. It was assumed that

students would more readily acquire conceptual understandings when exposed to a variety of relevant learning experiences. Thus a number of teaching methods were used in teaching the concepts (Table II). Burton, Kimball and Wing have suggested that concepts are more readily achieved when the learners come in contact with numerous and vivid clear-cut examples of things, persons, processes and relationships for which concepts are being achieved.⁵ In relation to learning experiences Woodruff succinctly concluded that it is the pupil who has to be put into action.⁶ Consequently, the learning experiences in the present study were designed to actively engage the students in processes believed to facilitate the development of conceptual understandings. These students analyzed case studies, films, a tape recording a novel, sociodramas and observed behavior in real-life situations. The learning experiences (Table II) involved the process of identifying principles, formulating generalizations and illustrating them, explaining cause-and-effect relationships and drawing valid conclusions based on learning experiences. Tyler has contended that in the final analysis it is not what the teacher does, but what the learner does, which determines learning.⁷

On the basis of the results of this study it can be said with a high degree of certainty that the students developed conceptual understandings as a result of the learning experiences encountered in relation to each concept. There was evidence to indicate that processes

⁵Burton, Kimball and Wing, p. 163.

⁶Woodruff, p. 193.

⁷Tyler, p. 151.

in concept teaching as identified by Woodruff,⁸ Tyler⁹ and Burton, Kimball and Wing¹⁰ were effective in the development of conceptual understandings among the college students studying family relationships. While there appears to be little doubt of the value of having the students engage in direct action with the subject matter, from a practical viewpoint one disadvantage became apparent. In order to render effective guidance in the process of concept development, the instructor found it necessary to evaluate practically all of the written responses of the students. With two classes of more than fifty students each, this was a very time-consuming task.

TABLE III
RELATIVE VALUE OF LEARNING EXPERIENCES
BASED UPON STUDENT EVALUATIONS

Learning Experience	Points*
Analysis of Case Studies	342
Lecture	281
Analysis of Films	272
Discussion	243
Supervised Reading	147
Sociodrama	141
Group Work	89
Tape Recording	87

*Based upon ranks of 1 to 5, with 5 representing the top rank.

⁸Woodruff, p. 185.

⁹Tyler, pp. 151-152.

¹⁰Burton, Kimball and Wing, p. 163.

While learning experiences used in the present study resulted in the development of conceptual understandings, it was assumed that the quality of the experiences would vary and that some teaching methods would be more effective than others. Piaget has stressed the importance of experience and its qualitative aspect in concept development.¹¹

Berger and Baumel have suggested that the nature of the learning experience itself whether visual or entirely verbal, will affect the time in which a concept will be attained.¹² Student evaluations of learning experiences (Table III) tended to support this view if time required to gain a concept can be considered a measure of the effectiveness of learning experiences. It was interesting to note that the tape recording (entirely verbal) was rated lowest as a method of helping students gain conceptual understandings. Sociodrama was also rated ineffective in this respect.

The three methods receiving the highest class ratings, Analysis of Case Studies, Lecture and Analysis of Films, involved both verbal and visual processes. The chalk board was used during the short lectures and written and oral analyses were made on the case studies. Group work, which was rated low in terms of effectiveness, entailed group reports. These reports were verbal with no supporting visual devices. Thus it would seem that both verbal and visual aspects of instruction might be considered basic dimensions of methods which are effective

¹¹ John H. Flavell, The Developmental Psychology of Piaget (Princeton, New Jersey: D. Van Nostrand Company, Inc., 1963), pp. 367-368.

¹² J. Joel Berger and Howard B. Baumel, "Developing Concepts in High School Chemistry," The Science Teacher, Vol. 28, February, 1961, p. 17.

in concept teaching.

Sociodrama as one of the three methods receiving a "low" student rating was mentioned by more students in this regard than any other learning experience. This result was interesting, in that it has been asserted that Sociodrama is a method especially appropriate for teaching skills in human relations.¹³ It has often been hypothesized that since students become actively involved in the experience, they should be able to acquire greater insight into the feelings of others in given situations. As a dramatized experience it would appear that the method should have the potential for being direct and meaningful. Why was this apparently not so? Perhaps one explanation is that relatively few students actually participated in the sociodramas while the rest merely observed. The classes were large (ranging from 65 to 75 students), possibly making hearing difficult. In some cases this factor served to increase the difficulty of students in observing and reacting to the situation portrayed. Students were hesitant to volunteer for the roles, perhaps because they could not readily identify with the situation, were unacquainted with each other, were fearful of being evaluated, or because the experiences came early in the semester and college was a new experience for many of them. For these reasons the participants may have been less effective in their roles than they would have been under more desirable circumstances.

Student evaluations of the relative effectiveness of the various

¹³Helene M. Hoover, "Sociodrama as a Teaching Method in Child Development and Family Living." Journal of Home Economics, Vol. 47, April, 1955, pp. 247-251.

methods seemed to indicate that the Analysis of Case Studies made it possible for him to come in contact with clear-cut examples and perceive processes and relationships for which concepts were being achieved. It must be remembered, however, that in concept teaching methods may supplement each other. Without some of the principles identified through assigned readings and lectures it would have been most difficult to analyze a case intelligently. For this reason a variety of experiences seem to be needed in order to insure concept attainment. Another point in favor of a variety of relevant experiences is that the utilization of experience can be expected to differ from one student to another and for the same student from one experience to another.

Number of Learning Experiences and Amount of Teacher Guidance

The present study also attempted to discover the number of encounters with relevant experiences necessary to insure the development of conceptual understandings. As indicated in Table II, the number of experiences decreased with each subsequent concept. The study of Concept IV (Communication) involved three experiences: (a) a written analysis of a film, (b) the reading of references selected by the instructor and (c) a written and oral analysis of a taped skit. On the basis of these experiences students achieved conceptual understandings as evidenced by final written responses designed to measure their understanding of communication as a process in interpersonal relationships. A comparison of group means for the four concepts revealed that the students scored slightly higher on IV, than on the first three concepts. The group means for Concepts I, II, III and

IV were 8.4, 8.7, 9.2 and 10.2, respectively. Group means were computed on the basis of the average number of points received for each area included in written responses for each concept. It was possible to receive 14 points for each area. Thus it appeared that after a rather extensive exposure to learning experiences relating to Concept I, the students were able to develop conceptual understandings related to Concepts II, III, and IV with progressively fewer planned learning experiences. Conceptual understandings were acquired on the basis of as few as three formal learning experiences. The investigator recognized that other factors such as the effectiveness of the learning experiences and the difficulty of the concept being taught might have influenced acquisition of conceptual understandings.

In the present study an effort was made to explore the amount of teacher guidance necessary for students to formulate generalizations based on learning experiences. Butts concluded that teacher direction was needed for concept development.¹⁴ Tyler¹⁵ and Woodruff,¹⁶ however, have emphasized the importance of doing by the student. Tyler observed that effective learning is an active endeavor on the part of the learner and what becomes a part of him is what he has actively formulated.¹⁷ He cautions against the tendency of some students to

¹⁴David P. Butts, "The Degree to Which Children Conceptualize From Science Experience," Journal of Research in Science Teaching, Vol. 1, June, 1963, p. 143.

¹⁵Tyler, p. 151.

¹⁶Woodruff, p. 193.

¹⁷Tyler, p. 145.

memorize principles without seeing relationships among them or comprehending the concepts to which they relate. The amount of teacher guidance, in the present study, was decreased with each subsequent concept.

In Concept I students were guided in identifying principles and formulating generalizations after the case analysis, class discussion, sociodrama and film analysis. During the teaching of Concept II, similar guidance was given following each group report and following the film analysis. In Concept III students were guided in identifying principles and developing generalizations after each group presentation. No guidance of this type was offered during the teaching period for Concept IV. The fact that the group mean increased for each successive concept indicated that the students were able to state generalizations related to Concept IV without systematic guidance from the instructor. When students asked for assistance in formulating generalizations at the culmination of the teaching period for Concept IV, the instructor emphasized the importance of learning how to learn. Accordingly, each student was provided an opportunity to independently draw conclusions (stated as generalizations) based on class experiences.

On the basis of this study it appeared that after previous experience in concept development students were able to function independently in formulating generalizations. It seems reasonable to infer, however, that substantial guidance is essential during initial exposure to the process of conceptualization.

Relationships of Selected Factors to Concept Development

TABLE IV

CORRELATION COEFFICIENTS: AMERICAN COLLEGE TEST (ACT) SCORES,
APPLICATION OF PRINCIPLES TEST SCORES, RANK IN
GRADUATING CLASS, AND COMPOSITE CONCEPT
SCORES

ACT		Application of Principles		ACT		Composite Concept Scores	
Mean	19.45		37.21	Mean	19.38		173.81
S.D.	4.64		8.16	S.D.	4.81		21.84
r			0.41	r			0.64
df = 100				df = 60			
	Rank in Graduating Class		Application of Principles		Rank in Graduating Class		Composite Concept Scores
Mean	3.08		36.55	Mean	3.11		172.13
S.D.	0.93		7.89	S.D.	0.91		20.76
r			0.34*	r			0.50
df = 100				df = 97			

*Significant at .01 level. Other coefficients significant beyond .01 level.

It was hypothesized that factors, in addition to organized learning experiences, would be related to development of conceptual understandings. One of the factors assumed to be related to concept development was academic ability. The findings of this study seemed to support this assumption. As shown in Table IV, a correlation coefficient of .41 statistically significant beyond the .01 level of confidence was found between ACT Scores and Application of Principles

Test Scores. A higher correlation coefficient of .64 was found between ACT Scores and Composite Concept Scores. Correlation coefficients of .34 and .50 were found between Rank in High School Graduating Class and Application of Principles Test Scores and Composite Concept Scores, respectively. A correlation of .34 was found to be significant at the .01 level while a correlation of .50 was significant beyond the .01 level. A correlation coefficient, when statistically significant, is sufficiently high to give reasonable assurance that some relationship exists between the variables correlated. The statistical significance of a correlation is dependent to a large degree upon the number of cases and also the purpose for which the correlation is intended. Since the present study was exploratory in nature, relationships between variables were being sought out. The prediction value of the correlation was not considered. In general, higher correlations than those found in the present study are necessary for group and individual predictions. The statistical significance of the Pearson product-moment correlations used in the present study was determined directly from a table in a statistics text.*

The correlation coefficients between academic ability, as measured by American College Test (ACT) Scores and Rank in High School Graduating Class and conceptual understanding, as measured by Application of Principles Test Scores and Composite Concept Scores, were sufficiently high to indicate a definite relationship between these factors. It was interesting to note that both measures of academic ability showed

*James E. Wert, Charles O. Neidt and J. Stanley Ahmann, Statistical Methods in Education and Psychological Research (New York: Appleton-Century-Crofts, Inc., 1954), p. 424.

a closer relationship with Composite Concept Scores than with the Application of Principles Test Scores. Perhaps one explanation is that the two devices measured different levels of conceptual understandings. The Application of Principles Test was designed to measure the more complex levels of conceptualization as identified by Bloom.¹⁸ It required student evaluation of specific situations (as described in a case study), recognition of cause-and-effect relationships and prediction of consequences. The students' scores ranged from 18 to 52 out of a possible 60 points. The mean for the group was 36.39. The Composite Concept Score, on the other hand, necessitated the formulation of generalizations in relation to a concept and demanded examples of the generalizations. Students were not asked to apply or relate the generalizations to a specific situation or to make judgments. Composite Concept Scores ranged from 123 to 217 with 266 possible. The group mean was 172.28. While a correlation coefficient of .43 between the Application of Principles Test Scores and Composite Concept Scores was statistically significant beyond the .01 level, it was not sufficiently high to indicate a strong relationship between the two measures of conceptual understanding.

The ACT Scores were more closely related to the Composite Concept Scores than was Rank in High School Graduating Class. A possible explanation for this is that the ACT Scores were more discriminating in terms of academic ability in that ACT Scores ranged from 7 to 30 while class rank ranged from 1 to 4, based on the quartile in which the student placed. Perhaps due to present college entrance

¹⁸Benjamin S. Bloom, Editor, Taxonomy of Educational Objectives (New York: Longmans, Green and Co., 1956), pp. 205-207.

requirements, few students (8) were located in the lowest quartile.

While Butts' study was not comparable to the present one, it should be noted that his findings differ from those of the present study. Studying conceptual development in science of fourth, fifth, and sixth graders and using different measures and analyses, he found no significant relationship between tested intelligence or science achievement scores and concept development.¹⁹ Although the results of the studies were not comparable, they do indicate opposite trends in the relationship of academic ability and concept development scores derived from different instruments. Research reported by Sigel indicated that efficiency of concept attainment may be associated with high I.Q. scores.²⁰

Piaget has asserted that concept development is dependent upon mental maturity.²¹ To the degree that I.Q. scores and academic ability may be indicative of mental maturity, one would expect them to be related to the development of conceptual understandings. Hence, the results of the present study seemed to lend support to Piaget's contention.

¹⁹Butts, pp. 135-143.

²⁰Irving E. Sigel, "The Attainment of Concepts," Review of Child Development Research, Edited by Martin L. Hoffman and Lois W. Hoffman, (New York: Russell Sage Foundation, 1964), pp. 237-238.

²¹Jean Piaget, "How Children Form Mathematical Concepts," Reprint from Scientific American, November, 1953.

TABLE V

CORRELATION COEFFICIENTS: PERSONALITY ORIENTATION INVENTORY
(POI), APPLICATION OF PRINCIPLES TEST SCORES
AND COMPOSITE CONCEPT SCORES

POI		Application of Principles	POI		Composite Concept Scores
Mean	292.14	36.39	Mean	292.60	172.28
S.D.	18.87	8.02	S.D.	17.53	22.33
r		0.12*	r		0.01*
df = 127			df = 112		

*Insignificant

A relationship between degree of self-actualization, or level of positive mental health, scores on certain dimensions of personality related to self-actualization and the attainment of conceptual understandings was sought primarily on the basis of conjecture. No research studies were found which might indicate the possibility of such a relationship. Likewise, theories of personality and learning did not seem to provide an adequate basis for assuming such a relationship. It was speculated, however, that a person scoring high on personality factors, such as Self-Acceptance, and Self-Regard, apparently related to the concepts being studied, and the person more fully using his capacities might more readily understand the concepts taught. Results of the study did not support this supposition. Insignificant correlations of .12 and .01 shown in Table VI were found between the total personality scores on the Personality Orientation inventory, indicating degree of self-actualization, and development of conceptual understandings.

TABLE VI

CORRELATION COEFFICIENTS: SUB-SCALE SCORES ON POI, APPLICATION OF PRINCIPLES TEST SCORES AND COMPOSITE CONCEPT SCORES

POI Sub-Scales	Application of Principles Test	Composite Concept
Inner-directed	$r = .32^*$	$r = -.03$
Existentiality	$r = .02$	$r = -.02$
Spontaneity	$r = .05$	$r = -.06$
Self-Acceptance	$r = .01$	$r = -.05$
Self-Actualizing Value	$r = .16$	$r = .16$
Feeling Reactivity	$r = .00$	$r = .02$
Self-Regard	$r = .08$	$r = .07$
Capacity for Intimate Contact	$r = .10$	$r = .00$

*Significant beyond the .01 level.

There are a number of possible explanations for this finding. First, it is possible that no relationship between degree of self-actualization and attainment of conceptual understandings exists. A second explanation might be that the total score measured several personality factors other than those related to the concepts taught. A third possibility is that the test items did not measure personality factors, such as the Self-Concept, in the same terms as those used in studying the concept. A study of the items from which the Self-Acceptance and Self-Regard scores were derived indicated some commonality between the terms and concepts used on the POI and those used in learning experiences to which the students were exposed. The degree of commonality, however, could not be ascertained with a high degree of

accuracy. There is also the possibility that the Self-Actualization score, encompassing many dissimilar dimensions of personality, may hold very little meaning with respect to this study. Finally, the Application of Principles Test needs further analysis to determine validity and reliability.

Eight of the twelve sub-scales of the POI designed to measure various aspects of self-actualization seemed related to the four concepts taught. These were correlated with the measures of conceptual understanding to determine whether or not there were any significant relationships. The eight scales measured the following aspects of personality: the degree to which the individual seemed Inner-directed, independent or self-supportive; Existentiality or flexibility in the application of values; Spontaneity or freedom in expressing feelings behaviorally; Self-Acceptance or the acceptance of self with weaknesses; Self-Actualizing Value or the extent to which the individual appeared to hold values of self-actualizing people; Feeling Reactivity or the degree to which the person seemed sensitive to his own needs and feelings; Self-Regard or high self-worth and Capacity for Intimate Contact, the extent to which an individual has warm interpersonal relationships.

The investigator postulated that a person who could think independently or one who was flexible and uninhibited, the individual with a healthy concept of self, or a person sensitive to his own needs and feelings and one with the capacity for warm interpersonal relationships might be able to more readily attain conceptual understandings

in family relationships. The conceptual understandings to which these factors were correlated related to the self-concept, worth of individuals, empathy and communication as processes of interpersonal relationships. Coefficients of correlations, shown in Table VI, generally did not support this supposition.

Only one of the personality factors, Inner-directed, was significantly related to the attainment of conceptual understandings as measured by Application of Principles Test Scores. The correlation coefficient, $r = .32$, was significant beyond the .01 level of probability. Thus it can be said with a high degree of certainty that a relationship did exist between this aspect of personality as measured by the POI and conceptual understandings in family relationships as measured by performance on the Application of Principles Test.

Correlation coefficients of .16 occurred between scores on Self-Actualizing Value and conceptual understandings as measured by both the Application of Principles Test and Composite Concept Scores. Though statistically insignificant, the correlation was sufficiently high to lead one to suspect the possibility of some association of this factor with attainment of conceptual understandings in family relationships. There seems to be sufficient indication of a relationship to warrant further investigation. Negligible correlations indicated no relationship between the other six personality factors measured by the POI and conceptual understandings.

Previous Exposure to Concept Approach and
Subsequent Concept Development

TABLE VII
INCREASED CONCEPTUAL UNDERSTANDING AS DETERMINED BY
COMPARISON OF CONCEPT SCORES I AND II
WITH CONCEPT SCORES III AND IV

Class total	114
Number showing increased understanding	101
Number showing decreased understanding	12
Number showing no change in understanding	1
	$Z = -8.67^*$

*Wilcoxon Matched-Pairs Signed Ranks Test; significant beyond the .01 level.

It was hypothesized that previous exposure to the conceptual approach to teaching would be related to subsequent development of conceptual understandings. Results, shown in Table VII, indicated that when scores on Concepts I and II were compared with scores on Concepts III and IV there was an increase in conceptual understanding significant beyond the .01 level ($Z = -8.67$). Thus it may be surmised that the development of one concept aided in the development of another concept. This trend toward improvement in concept development occurred even though the number of learning experiences and the amount of teacher guidance were decreased with each subsequent concept.

The findings of a study by Butts do not support this trend. He found no significant growth of understanding between concepts.²² As

²²Butts, p. 140.

has been noted, however, Butts' study involved fourth, fifth and sixth graders in a science class. The four concepts studied were unrelated and the learning experiences consisted of the independent manipulation of data by the students. The trend toward improvement in concept development found in the present study may be explained partially by the developmental level of the students. The maturity of the students may have resulted in more effective transfer of learning. The concepts were related, thus facilitating transfer of learning. The trend toward increased conceptual understanding may also be indicative of the effectiveness of the learning experiences utilized during the teaching process. Dewey has postulated that every experience should do something to prepare a person for later experiences; the value of an educational experience lies in the perception of relationships or continuities to which it leads.²³ He contended that learning should not only take us somewhere; it should allow us later to go further more easily. Hence, if the learning experiences on Concepts I and II were effective in teaching students to conceptualize, this would be expected to facilitate the development of conceptual understandings in Concepts III and IV.

Identification of Levels of Generalizations and Cognitive Processes

A further analysis of the data was made to determine if levels of conceptual understanding could be identified in terms of levels of

²³John Dewey, Democracy and Education (New York: The MacMillan Co., 1916), p. 170.

generalizations and cognitive processes utilized. An analysis of student written responses indicated that this was possible. However, levels of generalizations and cognitive processes involved were not always readily apparent. The following generalization taken from the written response of a student was classified as a first level generalization or one that was a definition, description or classification:

Empathic Ability is the process of projecting one's self into the role of the other person and observing why he acts and feels as he does. It is also differentiating between the role of another and one's self.

This generalization seems to be a definition and/or description of Empathic Ability. On the basis of Bloom's classification of cognitive processes it seemed to involve knowledge (the process of bringing to mind appropriate material) and comprehension (knowing what is being communicated or making use of the idea without necessarily relating it to other material or seeing its fullest implication).²⁴ The student defined and/or described Empathic Ability but did not relate it to interpersonal relationships or processes of interaction within the family. Therefore, it was considered the first or lowest level of conceptual understanding, involving the less complex processes.

Second level generalizations were defined as those showing relationships among ideas and including more ideas than the first level. The cognitive processes involved seemed to be that of application and analysis in addition to knowledge and comprehension. According to Bloom application involved the use of principles and/or ideas which must be remembered and applied to particular situations. Analysis entailed the

²⁴Bloom, pp. 201-205.

breaking down of material into its constituent parts so that the relationship among ideas was made explicit.²⁵ The following student generalizations seemed to be second level generalizations:

The first, and possibly the most important, influence on one's self-concept is the family. A child's first look at what others think of him comes from the family.

A child develops a self-concept as family members give their evaluations of him.

An individual reflects through his behavior, his goals, values and perception of himself.

It seemed evident from the first two generalizations that the student perceived a relationship between the development of the self-concept and family environment, interaction and/or influences. The third generalization further indicated an understanding of the relationship between behavior and the self-concept. Also evident was a conclusion based on this relationship, i.e., behavior is a reflection of the self-concept. Thus one may surmise that the student was able to draw relationships among ideas and draw conclusions based on these relationships. To the extent that this was true, the generalization may be considered second level and may be assumed to have involved application and analysis in terms of cognitive processes utilized.

Third level generalizations were described as generalizations that explain, justify, interpret or predict. Students at this level were expected to see cause-and-effect relationships and predict consequences. Third level generalizations were perceived as involving synthesis (combining ideas and principles to form a pattern not clearly seen before) and evaluation (making judgments about the value of methods

²⁵ Ibid., pp. 205-206.

and/or processes for given purposes). The following were categorized as third level generalizations:

An individual is better able to communicate if he feels that he is understood and accepted by those with whom he wishes to communicate.

Defensiveness on the part of an individual can block communication. The failure to recognize defensiveness in one's self and others blocks communication.

Communication promotes growth of healthy personalities, problem-solving is easier, needs and desires can be met if they are known, and understanding is at a peak when communication is productive.

The first two generalizations seemed to clearly state cause-and-effect relationships, i.e., defensiveness impedes communication while acceptance of others facilitates communication. The third generalization which was related to the function of communication in family relationships appeared to involve judgment concerning its value as a process of interaction among individuals. It involved several basic ideas, indicated relationships among them and seemingly introduced a pattern not apparent before. Implied in the generalization is an understanding of the value of communication in personal development and in resolving conflicts and promoting understanding among individuals. It also acknowledged the ideas of productive communication, needs of individuals and need fulfillment as a function of family relationships. Hence, the generalization was classified as third level and the process of developing the generalization was believed to involve synthesis (combining ideas to form a new pattern) and evaluation (making judgments about the value of processes for given purposes).

While not all generalizations could be readily assigned to the first, second and third level, upon careful analysis the level was

discernable in most instances. Likewise, it seemed possible to determine the cognitive process involved with some degree of accuracy.

Another indication of level of conceptual understanding was obtained from scores on the Application of Principles Test. Part I of the test (Appendix D) was designed to measure the ability of the students to analyze a specific situation, as depicted in the case study, to recognize basic ideas and relationships among them, to recognize cause-and-effect relationships, to predict consequences and draw conclusions based upon evaluation and judgment. These cognitive processes, according to Bloom, are utilized in the more complex levels of thinking, namely, synthesis and evaluation.²⁶ It was recognized, however, that knowledge, comprehension, application and analysis were also involved. Part II of the test involved, primarily, application. It required students to select principles necessary to explain answers to Part I. An item analysis was run to determine the relative difficulty of the two parts of the test as indicated by the proportion of the students responding correctly to the items of each part. The evidence indicated that Part I, designed to involve the more complex cognitive processes, was the more difficult. Thus it appeared that levels of conceptual understanding could be identified on the basis of cognitive processes involved. A comparison of post-test performance on the Definitions Test with scores on the Application of Principles Test revealed that the majority of students reached the first level of conceptual understanding, that of being able to define or categorize a concept, while less than half of the group answered seventy percent

²⁶Bloom, pp. 206-207.

or more of the questions correctly on the Application of Principles Test. Hence, to the extent that the test measured these factors, less than half of the group evidenced the ability to analyze a specific situation, to recognize basic ideas, to draw a relationship among them, to see cause-and-effect relationships and to predict consequences.

Pattern of Concept Development of Five Students Rating High and Five Students Rating Low in Conceptual Understandings

The patterns of concept development of five students who rated low in conceptual understandings and five students who rated high in conceptual understandings, selected at random, were analyzed.* The two groups of five each were compared in relation to the following factors:

1. Pre-test and post-test scores on objective portion of Definitions Test.
2. Growth in conceptual understandings from one concept to another as indicated by score increase.
3. Level of generalizations used in written responses.

A comparison of the pre-test and post-test scores of the two groups on the objective portion of the Definitions Test indicated a general increase for both groups. There was a score increase for all students in the high group, while in the low group one score remained the same, one decreased and three increased. Thus, there seemed to be a more definite pattern of increase in conceptual understandings among members

*Students were placed in three categories in terms of conceptual understanding, low, medium, and high. The cases in the high group were drawn at random from a box. The same procedure was followed in selecting the five cases in the low group.

of the high group. On the post-test all of the students in the high group correctly identified the definitions of the four concepts, whereas only one in the low group correctly identified the four definitions.

It appeared, therefore, that while the students in both groups profited from the learning experiences, four of the five in the low group did not reach the lowest level of conceptual understanding in relation to all four concepts. In terms of concept development, both groups generally showed increased conceptual understanding. The low group, however, indicated less understanding of the concepts at the beginning of the unit and at the beginning of each concept than did the high group. The low group also indicated less conceptual understanding at the culmination of the unit and at the end of each concept. Thus the high group began at a higher level of conceptual understanding and concluded the study with greater understanding of the concepts than did the low group. Such a pattern might be expected if it can be assumed that concept development is a slow, gradual process.

Three of the five students in the high group evidenced a consistent score increase from Concept I through Concept IV. One of the other two scored lower on Concept II than on Concept I and higher on the last two concepts while the remaining student scored the same on Concepts II and III with scores higher than on Concept I and lower than the score on Concept IV. In general the pattern of concept development was one of consistent growth. In the low group, only one student evidenced a consistent pattern of increased growth in concept development. The other four students showed an increase in score from Concept I to Concept II, a decrease on Concept III and an increase on Concept IV. Two of the four students, however, scored lower on Concept IV than on

Concept II. Hence, the pattern of concept development was more irregular for the low group than for the high group. Yet both groups evidenced some increase in conceptual understanding. As with the pre-test and post-test scores, the low group, when compared with the high group, scored consistently lower on Concept I and also on each subsequent concept.

It might be inferred from the greater irregularity of pattern of concept development found among the low group that these students experienced greater difficulty in transfer of learning. They apparently less readily acquired the process of conceptualization and were affected to a greater extent by the nature of the concept and the number of learning experiences provided, as well as the amount of teacher guidance provided during the teaching of each concept. The fact that three of the students in the low group made the lowest score on Concept III, Healthy Concept of Self, may indicate that it was the most difficult concept for the low group to attain.

An analysis of the written responses on each of the four concepts indicated that students in the low group seldom stated third level generalizations. First level generalizations were more often found among this group than among the high group. Second level generalizations were found in the responses of both groups while third level generalizations were prevalent in the high group on Concepts III and IV. The low group seemed to progress from first level to second level generalizations but seldom utilized the third level. The high group, however, definitely evidenced the ability to conceptualize at the third level with a high degree of accuracy. It may be inferred, then,

that the low group functioned at a lower level in terms of cognitive processes utilized than did the high group.

Summary

The major hypotheses investigated in the present study were:

1. A systematic, organized approach to concept teaching in family relationships will result in the development of conceptual understandings by college students.
2. Factors other than learning experiences are related to concept development of students.

The findings of the study tended to support these hypotheses:

1. A Z score of -9.13 derived from the Wilcoxon Matched-Pairs Signed Ranks Test, utilizing scores from a pre-test and post-test, showed an increase in conceptual understandings statistically significant beyond the .01 level of probability. This finding indicated that learning experiences organized around the four selected concepts in family relationships resulted in the development of conceptual understandings by college students.
2. The students rated Analysis of Case Studies, Lecture and Analysis of Films as the three methods most effective in helping them attain conceptual understandings. Sociodrama, Group Work and a Tape Recording received low student ratings in terms of effectiveness as learning experiences.
3. The students, after being exposed to a variety of learning experiences related to Concepts I, II, and III,

developed conceptual understandings in relation to Concept IV (Communication) on the basis of three classroom experiences. The students developed generalizations relating to the concept without systematic guidance from the instructor. Although indirect guidance was offered through the regular learning experiences actual verbalization of Concept IV was left entirely to the student.

4. Correlation coefficients of .41 and .64 (significant beyond the .01 level) indicated a relationship between American College Test (ACT) Scores and Application of Principles Test Scores and Composite Concept Scores, respectively.
5. A correlation coefficient of .34 (significant at the .01 level) indicated a relationship between Rank in High School Graduating Class and Application of Principles Test Scores. A correlation coefficient of .50 (significant beyond the .01 level) between Rank in Graduating Class and Composite Concept Scores was significantly high to indicate a definite relationship between these factors. Thus a positive relationship was found between academic ability, as measured by ACT Scores, and Rank in High School Graduating Class and concept development.
6. Statistically insignificant correlation coefficients of .12 and .01 indicated little or no relationship between total scores on the Personality Orientation Inventory (POI) and Application of Principles Test Scores and Composite Concept Scores, respectively. Hence, no relationship was found between degree of self-actualization as measured by the POI

and concept development in family relationships as measured by Application of Principles Test Scores and Composite Concept Scores.

7. A correlation coefficient of .32 (significant beyond the .01 level) between the personality factor, Inner-directed, as measured by the P01, and concept development as measured by Application of Principles Test Scores and Composite Concept Scores, indicated that no relationship existed among the variables.
8. A Z score of 8.67 (significant beyond the .01 level) derived from the Wilcoxon test indicated that the students scored significantly higher on Concepts III and IV than on Concepts I and II. Thus it appeared that previous exposure to the concept approach to teaching facilitated subsequent development of conceptual understandings.
9. Upon careful analysis, generalizations developed by the students could be classified according to level and cognitive processes utilized.
10. A comparison was made of the pattern of concept development of five students who rated low in conceptual understandings with five students who rated high in conceptual understandings. The high group indicated greater understanding of the concepts at the beginning as well as at the culmination of the unit. Both groups evidenced growth in conceptual understandings. Members of the high group, however, indicated a fairly consistent pattern of increase in conceptual understandings while members of the low group evidenced a more

irregular pattern of concept development. The low group scored lowest on Concept III, Healthy Concept of Self. Members of the high group stated third level generalizations in written responses more frequently than did members of the low group. Consequently, the high group apparently utilized more complex cognitive processes in concept development than did the low group.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

The purpose of this investigation was to determine whether or not a systematic, organized approach to concept teaching in family relationships resulted in the ability of college students to develop conceptual understandings. The study was also designed to discover if academic ability and certain personality factors were related to concept development. The two hypotheses tested were:

1. A systematic, organized approach to concept teaching in family relationships will result in the development of conceptual understandings by students.
2. Factors other than learning experiences are related to the development of concepts by students.

The subjects for the study were 131 college students enrolled in a freshman level course, Personal Adjustment for Family Living, at Arizona State University during the fall semester (1965-66).

The major concept taught by the investigator was Interpersonal Relationships. Learning experiences were organized around four sub-concepts: (1) Empathic Ability, (2) Respect for the Worth and Dignity of the Individual, (3) Healthy Concept of Self and (4) Communication. A procedure, based primarily on the problem solving

method, was developed for teaching each concept.

Conceptual understanding was measured by a Definitions Test, an Application of Principles Test and a Composite Concept Score derived arbitrarily from totaling the scores on the written responses for the four concepts. Understanding of each concept was measured by written responses of students. These responses were evaluated by the investigator on the basis of a rating scale developed for this purpose. The total points received on each concept constituted the student's score on the concept. The Definitions Test, developed by the investigator, was used as a pre-test and post-test. It was designed to measure understanding of the four concepts. The Application of Principles Test, also developed by the investigator, was designed to measure conceptual understanding in relation to the four concepts. It was administered at the culmination of the unit on Interpersonal Relationships and was designed to measure a higher level of conceptual understanding than that indicated by the Definitions Test or the written responses of students. In the statistical computations Application of Principles Test Scores and Composite Concept Scores were used as measures of conceptual understanding and were correlated with academic ability and personality factors. Pre-test and post-test scores on the Definitions Test were used as an index of the degree of concept development of students.

Academic ability was measured by American College Test (ACT) Scores and Rank in High School Graduating Class. The Personality Orientation Inventory (POI) was used to measure personality factors that might be related to the development of conceptual understandings in family relationships. The personality factors studied in relation to concept

development were: (1) Self-Actualization, (2) Inner-directed, (3) Existentiality, (4) Spontaneity, (5) Self-Acceptance, (6) Self-Actualizing Value, (7) Feeling Reactivity, (8) Self-Regard and (9) Capacity for Intimate Contact.

Pearson product-moment coefficients of correlation were used to determine the relationship of academic ability and personality factors to the attainment of conceptual understandings.¹ The Wilcoxon Matched-Pairs Signed Ranks Test was used to determine the significance of the difference between pre-test and post-test scores on the Definitions Test and between students' combined scores on Concepts I and II and students' combined scores on Concepts III and IV.² To determine teaching methods that encouraged concept development, a variety of techniques were used. At the end of the unit on Interpersonal Relationships each student was asked to select the five methods he considered most effective in helping him understand the four concepts. He then ranked the five methods from most to least effective. The most effective method was given a rank of 5, the next ranked method was given a rank of 4 and the other methods listed were ranked 3, 2 or 1 according to the order listed. Each time a method received a rank of 5 it was assigned 5 points; when the method was ranked 4, 3 or 2 it received 4, 3 or 2 points, respectively. A method receiving a rank of 1 was assigned 1 point. The relative effectiveness of each method was inferred from the total points assigned to it. Each student was also asked to list the method he felt

¹James E. Wert, Charles O. Neidt and J. Stanley Ahmann, Statistical Methods in Educational and Psychological Research (New York: Appleton-Century-Crofts, Inc., 1954), p. 83.

²Sidney Siegel, Non-Parametric Statistics (New York: McGraw-Hill, 1956), p. 81.

was least effective. The ineffectiveness of the method was inferred from the number of times a method was listed as least effective.

To obtain some indication of the number of learning experiences necessary to insure the development of conceptual understandings, the number of learning experiences was decreased for each concept, I through IV.

To discover the amount of teacher guidance necessary for students to formulate appropriate generalizations from selected learning experiences, the amount of teacher guidance was systematically decreased as the group moved from one concept to another.

The significance of the difference between students' combined scores on Concepts I and II and students' combined scores on Concepts III and IV was used as an indication of the degree to which previous exposure to the concept approach to teaching facilitated subsequent development of conceptual understandings.

Certain limitations of the study have been recognized. The study was limited to the teaching of one major concept in family relationships which was approached through teaching four supporting concepts in two freshman level classes. Non-standardized instruments developed by the investigator were used to measure conceptual understanding. These were limited to three devices: (1) a Definitions Test, (2) an Application of Principles Test and (3) student statements of generalizations (written response). No attempt was made to develop or measure attitudes or changes in emotional or social behavior. The study was conducted in terms of an exploratory rather than a definitive one.

Conclusions

An analysis of the results of this investigation seems to warrant certain conclusions with respect to the 131 subjects exposed to systematic, organized learning experiences in family relationship. The conclusions are based upon the development of conceptual understandings in the area of Interpersonal Relationships.

1. The concept approach to teaching family relationships as developed in this study resulted in the ability of college students to develop conceptual understandings. This was evidenced by the fact that post-test scores on the Definitions Test were significantly higher than pre-test scores, indicating definite growth in conceptual understandings. The Z score, -9.13 , derived from the Wilcoxon Matched-Pairs Signed Ranks Test, was statistically significant beyond the .01 level of probability. Hence, the evidence indicated that course content, organized on the basis of concepts, principles and generalizations provided an adequate framework for organizing learning experiences in family relationships which encouraged concept development.
2. Some learning experiences were more effective than others in helping students develop conceptual understandings. Analysis of Case Studies, Lectures and Analysis of Films were more effective, according to the judgment of the students, than were Sociodrama, Group Work and a Tape Recording in helping students attain concepts.

3. Students were able to attain conceptual understandings with progressively fewer planned learning experiences as they moved from Concept I through Concepts II, III and IV. Conceptual understandings related to Concept IV were acquired on the basis of three relevant learning experiences in comparison with seven, five and four for Concepts I, II and III, respectively. Group means for the four concepts were: Concept I (Empathic Ability) 8.4; Concept II (Respect for Dignity and Worth of the Individual) 8.7; Concept III (Healthy Concept of Self) 9.2; Concept IV (Communication) 10.2.
4. The students were able to independently draw conclusions, stated as generalizations, based on class experiences related to Concept IV (Communication).
5. Academic ability, as defined in this study, was associated with concept development in family relationships. A correlation coefficient of .41, statistically significant beyond the .01 level, occurred between American College Test (ACT) Scores and Application of Principles Test Scores. A coefficient of .64, significant beyond the .01 level, was found between ACT Scores and Composite Concept Scores. A correlation coefficient of .34, significant at the .01 level, resulted between Rank in High School Graduating Class and Application of Principles Test Scores. A correlation coefficient of .50, significant beyond the .01 level, was found between Rank in Graduating Class and Composite Concept Scores.

6. On the basis of measures and statistical analyses utilized in this study, little or no relationship existed between the degree of self-actualization and concept development. Statistically insignificant correlation coefficients of .12 and .01 occurred between total scores on the Personality Orientation Inventory (POI) and Application of Principles Test Scores and Composite Concept Scores, respectively.
7. The personality factor, Inner-directed, as defined in the POI, was associated with concept development in family relationships. Seven other personality factors measured by the POI were not associated with concept attainment. A correlation coefficient of .32, significant beyond the .01 level, was found between the personality factor, Inner-directed, as measured by the POI and concept development measured by Application of Principles Test Scores. No appreciable relationship was found between Existentiality, Spontaneity, Self-Acceptance, Self-Actualizing Value, Feeling Reactivity, Self-Regard or Capacity for Intimate Contact, as measured by the POI and concept development measured by Application of Principles Test and Composite Concept Scores.
8. Previous exposure to the concept approach to teaching facilitated subsequent development of conceptual understandings. The findings indicated that the students scored significantly higher on Concepts III and IV than on Concepts I and II. A Z score of -8.67, significant beyond the .01 level, was derived from the Wilcoxon Test.
9. Generalizations formulated by students could be classified

as first, second or third level, on the basis of cognitive processes utilized.

10. The pattern of concept development for students who rated low on conceptual understandings differed from that of students rating high in conceptual understandings. The five students who rated high on conceptual understandings evidenced a fairly consistent pattern of growth while the five students who rated low on conceptual understandings indicated an irregular pattern of growth in concept development. The low group scored lowest on Concept III, Healthy Concept of Self, indicating that the pattern of concept development of students rating low in conceptual understandings was influenced by the concept studied to a greater extent than the pattern of the student rating high in conceptual understandings. Members of the high group usually stated third level generalizations in written responses, indicating their understanding of Concepts III and IV. Members of the low group predominantly stated first and second level generalizations in written responses. The five students who rated low in concept development, when compared with the five who rated high in concept development, indicated less understanding of the concepts at the beginning and again at the culmination of the unit. Both groups evidenced growth in conceptual understandings.
11. Generalizations developed by the students can be classified according to level and cognitive process utilized. Some of

the students were capable of the highest level of conceptualization, i.e., making inferences, creating and evaluating hypotheses and deducing logical conclusions.

12. The Application of Principles Test and Composite Concept Scores measured the same factor, conceptual understandings. A correlation coefficient of .43, significant beyond the .01 level, occurred between Application of Principles Test Scores and Composite Concept Scores.

The findings of the present study, in general, supported the conceptualizing of learning processes postulated by Tyler,³ Woodruff,⁴ Berger and Baumel,⁵ Otto,⁶ Brandwein, Watson and Blackwood,⁷ Carpenter and Burton,⁸ Kimball and Wing.⁹ Conceptual understandings were

³Ralph W. Tyler, "The Knowledge Explosion: Implications for Secondary Education," The Educational Forum, Vol. 29, January, 1965, pp. 145-153.

⁴Asahel Woodruff, Basic Concepts of Teaching (San Francisco: Chandler Publishing Co., 1961).

⁵J. Joel Berger and Howard B. Baumel, "Developing Concepts in High School Chemistry," The Science Teacher, Vol. 28, February, 1961, pp. 15-19.

⁶Arleen Otto, "A Case for Home Economics Concepts Implementation," (Speech presented at American Vocational Association Convention, Teacher Education Section Meeting, Atlantic City, New Jersey, December, 1963).

⁷Paul F. Brandwein, Fletcher G. Watson and Paul E. Blackwood, Teaching High School Science: A Book of Methods (New York: Harcourt Brace and Co., 1958).

⁸Finley Carpenter, "The Effect of Different Learning Methods on Concept Formation," Science Education, Vol. 40, October, 1965, pp. 282-285.

⁹William H. Burton, Ronald B. Kimball and Richard L. Wing, Education for Effective Thinking (New York: Appleton-Century-Crofts, Inc., 1961).

developed by college students on the basis of clearly defined learning experiences relating to four concepts. The students, actively engaged in the learning process, stated generalizations based on learning experiences relating to each concept. It appeared that procedures of effective teaching suggested in the review of literature and applied in this study resulted in concept development. The concept approach to teaching was simply the process of utilizing learning procedures which psychological theory has supported as being conducive to effective learning. The findings emphasized the importance of careful, systematic planning based on clearly defined objectives.

The findings supported the assumption that some learning experiences are more effective than others in concept development. Apparently the methods rated most effective by the students aided them in recognizing basic concepts and principles. Furthermore, there was evidence that these methods helped them relate such learnings to incidents depicting real-life situations. The lectures seemingly were effective in providing a framework or basic pattern for the learning experiences and in giving direction and purpose to the study of family relationships. As a result of lectures presented in the initial phase of study of some of the concepts, the students were able to perceive major concepts and principles which they utilized in subsequent learning experiences.

Analyzing case studies and films seemed to provide opportunity for the learners to see specific examples of processes of interaction and relationships related to the concepts studied. They were able to relate principles of interpersonal relationships to specific situations and to see cause-and-effect relationships. Learning

experiences related to Concept III, Healthy Concept of Self, were based primarily on a case study. One of the most effective assignments, from the viewpoint of the instructor, was one in which students were assigned specific references relating to the self-concept and then were required to select five basic principles from the readings and illustrate them with incidents from the case study. As a group, the students evidenced the ability to recognize and state basic principles based on authority and to relate them to specific situations. In a short lecture preceding the assignment, the procedure was explained and illustrated by the instructor. The instructor observed, however, that the assignment seemed less effective for that small group of students experiencing difficulty in recognizing and/or stating principles and in learning to state generalizations. As might be expected, those who found it difficult to conceptualize selected more or less unrelated facts and could not relate them to the case in a meaningful way. Thus it appeared that the student's ability to profit from certain learning experiences was dependent upon his intellectual development.

Findings of the present study provided little indication of the number or variety of experiences necessary for concept development. While a number of varied experiences were utilized, concept development might have resulted with fewer planned experiences. While it seemed advisable to provide numerous experiences in teaching Concepts II and III, the process was time-consuming. The possibility of student fatigue and subsequent loss of interest was considered. There was no evidence, however, to indicate this was the case. It should be noted, nevertheless, that the process of conceptualization, employed in this study, was a new experience for the students. There seemed little

reason to question the wisdom of utilizing a variety of teaching methods. Student responses indicated wide variation among individuals in terms of methods effective in helping them attain concepts. Moreover, there were definite indications that various methods supplemented each other in fostering concept development.

Results of the study indicated that the students learned types of questions the course sought to answer, methods used to study these questions, concepts used to give order and meaning to the content and how the subject related to their lives, present and future. In short, the students apparently learned the concept approach to family relationships. By Concept II, students formulated questions to be answered with little teacher guidance; by Concept III, they identified and/or formulated principles based on readings and related them to a specific situation. While studying Concept IV the students independently formulated generalizations based on learning experiences. Thus it appeared that the students learned how to approach the subject, draw conclusions relating to it and how to apply these to specific incidents as revealed in their illustrations of generalizations relating to family relationships.

The finding that academic ability was related to concept development seemed logical in view of what is known about the process of conceptualization. In general, concept formation is a cognitive process concerned with the perception of significant relationships. Hence, it would seem that ability to achieve academically would be associated with the ability to attain concepts. It was recognized that while an individual may vary in his intellectual skills according to subject matter, cognitive processes involved and nature of

the academic exercise, some uniformity in academic performance could be expected.

The fact that no relationship was found between concept development and level of positive mental health as measured by the POI, as well as between concept development and seven of the eight specific personality factors studied, indicated that degree of self-actualization may not be associated with attainment of the concepts studied. One might hypothesize that concept development is primarily an intellectual process involving learning how to learn or how to approach a subject in a given way. Thus the attributes of personality may tend to have little bearing on one's capacity to conceptualize. It is possible, however, that the personality scale employed in the present study merely lacked the sensitivity necessary to disclose such a relationship.

It should be noted that a significant relationship was found between the personality factor, Inner-directed, and concept development measured by Application of Principles Test Scores. The rationale for such a relationship, when seven other selected personality factors (as measured by the POI) failed to disclose similar relationships, is difficult to explain. Perhaps the personality dimension in some way reflected an openness to new experiences or independence of thought which may facilitate the acquisition of concepts.

Implications for Further Research

The present research seems to hold a number of implications for future research relating to the development of conceptual understandings.

1. One of the more promising directions for future research seems to be studies designed to determine the effectiveness of the concept approach (a) in terms of retention and transfer of learning, (b) as means of developing powers of critical thought and (c) in changing attitudes and social and emotional behavior.
2. Further research is needed to discover:
 - (a) The number of relevant experiences needed to teach concepts basic to a subject matter area.
 - (b) Types of experiences effective in helping students with different academic potential develop conceptual understandings.
 - (c) Teaching methods effective for developing concepts at different levels of cognition.
 - (d) Teaching methods most effective in teaching students to conceptualize.
 - (e) The effect, if any, that class size might have on the efficiency of concept attainment as conceived in the present study.
 - (f) How the concept approach to teaching family relationships, as applied in the present study, might compare with concept achievement in more traditional classroom experience.
 - (g) Types of evaluation instruments suitable for measuring different levels of conceptual understanding.
3. If the development of conceptual understandings is considered a desirable outcome of the educative process,

research is needed to determine effective means of teaching teachers in home economics how to utilize the concept approach to teaching.

4. Further study of factors which seem to facilitate concept development seems warranted.
5. The results of this study suggest a need for a more intensive study designed to discover personality factors, measured by different instruments, that might be related to the development of conceptual understandings. Further research of this type might determine what accounts for the apparent relationship of the personality factor, Inner-directed, as measured by the P01, and concept development in family relationships.

Summary

Results of the present study, involving 131 students enrolled in a freshman course in Home Economics at Arizona State University, tended to support the hypotheses that (1) a systematic, organized approach to the teaching of family relationships will result in concept development by students and that (2) factors other than learning experiences are related to the development of concepts by students. The results indicated significant concept development when the students were exposed to learning experiences aimed at the teaching of four concepts in family relationships. Significant correlations were found between academic ability and the personality factor, Inner-directed, and the development of conceptual understanding.

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APPENDIX A

DUPLICATED FORMS USED FOR WRITTEN RESPONSES

UNDERSTANDING OF EMPATHY

Below are listed the major areas we have considered in relation to Empathic Ability. Under each area formulate the conclusions that you feel are justified on the basis of class experience. State the conclusions in the form of principles or generalizations and give examples to illustrate them whenever possible.

Example

Major Area: The development of Empathic Ability.

Generalization: Empathy is developed through confiding in another person and discussing issues freely.

Illustration: Husband disappointed with results of meeting with top executives. Explains to wife exactly how he felt and his evaluation of possible outcome as result of his performance.

Major Areas: Empathy.

- I. The Development of Empathic Ability.
- II. The Nature of Empathic Ability (what it is).
- III. Traits Associated with Empathic Ability.
- IV. Factors that Block Empathic Process.
- V. The Importance of Empathy in Interpersonal Relationships and Family Life.
- VI. Other Areas (list any you have been made aware of which are not listed above and give conclusions).

UNDERSTANDING OF RESPECT

Below are listed the major areas we have considered in relation to Respect. Under each area formulate the conclusions that you feel are justified on the basis of class experiences. State the conclusions in the form of principles or generalizations and give examples to illustrate them whenever possible.

Example

Major Area: The Nature of Respect.

Generalization: Respect for another involves understanding of the other person's needs and the ability to accept him unconditionally.

Illustration: Parents accept Jim's negative behavior as the striving for independence of a two-year old and do not punish him for it or expect him to behave as a three- or four-year old.

Major Areas: Respect.

- I. The Nature of Respect (what it is).

- II. The Relation of Respect to Successful Family Relationships (why it is important in family life).

- III. What People do When They Respect the Dignity and Worth of the Individual.

- IV. The Relation of Respect to Personal Development.

- V. Other Areas (list any you have been made aware of which are not listed above and give conclusions).

UNDERSTANDING OF THE SELF-CONCEPT

Below are listed the major areas we have considered in relation to the Self-Concept. Under each area formulate the conclusions that you feel are justified on the basis of class experiences. State the conclusions in the form of principles or generalizations and give examples to illustrate them whenever possible.

Example

Major Area: Stability of the Self-Concept.

Generalization: The self may change as a result of maturation and learning.

Illustration: As a person matures and broadens his experiences he is in a position to better appraise his strengths and weaknesses and evaluate himself realistically. This may lead to modification of the self-concept.

Major Areas: Self-Concept.

- I. Stability of Self-Concept.
- II. The Self-Concept and Individual Behavior.
- III. Relation of Self-Concept to Successful Family Relationships.
- IV. Nature of Self-Concept.
- V. Formation of Self-Concept (process and influence).
- VI. Relation of Self-Concept to Healthy Personality.

UNDERSTANDING OF COMMUNICATION

Below are listed the major areas we have considered in relation to Communication. Under each area formulate the conclusions that you feel are justified on the basis of class experiences. State the conclusions in the form of principles or generalizations and give examples to illustrate them whenever possible.

Example

Major Area: Factors that Impede the Communication Process.

Generalization: Defensiveness on the part of an individual blocks effective communication.

Illustration: The husband mentions that expenses have exceeded the amount budgeted for the month. The wife takes it as criticism of her ability to manage finances. She reacts negatively and a quarrel develops rather than an intelligent discussion of the problem.

Major Areas: Communication.

- I. Factors Related to Individual's Ability to Communicate.
- II. Value of Communication in Family Relationships.
- III. Factors That Impede the Communication Process.
- IV. Productive Communication.

APPENDIX B

RATING SCALE FOR WRITTEN RESPONSES

I. CORRECTNESS OF GENERALIZATION

0	1	2
Generalization Incorrect	Generalization adequate but indicative of some ambiguity	Generalization correct, indicative of thorough understanding of concept

II. RELATEDNESS OF GENERALIZATION TO CONCEPT

0	1	2
Generalization unrelated to concept under study	Some relationship between generalization and concept	Generalization closely related to concept

III. ADEQUACY OF EXAMPLE OF GENERALIZATION

0	1	2
Incorrect example in terms of generalization	Example adequate, fails to clarify meaning of generalization	Example accurate, clarifies meaning of generalization

IV. LEVEL OF GENERALIZATION

1	2	3
A description, definition, analogy, identification or classification	Establishes relationships among ideas, uses comparisons	Explains, justifies, interprets, predicts

V. VOCABULARY

1	2	3
Indicative of meaning in layman's terms	Employs some technical and some common terminology	Explicit terminology, uses sophisticated terms

VI. MEANINGFULNESS OF GENERALIZATION

1	2	3
Generalization of minimum applicability	Generalization meaningful but of limited applicability	Generalization comprehensive, basic, possesses broad applicability

APPENDIX C

DEFINITIONS TEST

Directions: For Part A of the following questions select from among the five responses listed that response that is the best answer. Write the number of your choice in the blank to the left of the question.

Answer Parts B and C in as brief a manner as possible using a few sentences to cover the important points needed to answer each.

- _____ 1. (A) Empathy can best be described as
1. A process of interaction which promotes understanding among people.
 2. A sympathetic understanding of others which enables one to relate to them in a meaningful way.
 3. A process of role taking where the individual tries to view things from another's point of view.
 4. The ability to place oneself in another person's position and perceive accurately how he feels.
 5. The ability to express one's feelings, thoughts, and needs.
- (B) Explain how empathy functions in interpersonal relationships.
- (C) Why is empathy important in family relationships?
- _____ 11. (A) Respect for the worth and dignity of the individual can best be described as
1. The attitude that all individuals are equal and deserve equal rights and the respect of others.
 2. The act of making allowances for each individual's point of view and purposes.
 3. Faith and trust in another person and in people in general.
 4. A tolerance for human imperfections, a concern for others, and an objective attitude toward them.

5. The unconditional acceptance of a person, a genuine concern for his welfare and the ability to see and value his uniqueness.
- (B) Explain how respect functions in interpersonal relationships.
- (C) Why is respect important in family relationships?
- _____ III. (A) A healthy concept of self can best be described as
1. A general feeling of well being which involves self-acceptance, self-understanding, positive self-regard and a realistic self-image.
 2. A good reputation among one's associates and acceptance by them.
 3. Freedom from defense mechanisms, neurotic tendencies and feelings of inferiority.
 4. A set of fixed values which direct a person in making decisions concerning appropriate behaviors in relation to other people.
 5. The ability to cope with problems, relate to others in a way that is satisfying to the self and to live a productive life.
- (B) Explain how a healthy concept of self relates to interpersonal relationships.
- (C) Why is a healthy self concept important in family relationships?
- _____ IV. (A) Communication can best be described as
1. A form of discussion among individuals which leads to increased understanding and the solution of problems.
 2. The process of sharing one's thoughts and feelings with other people.
 3. A two-way process of sharing ideas in common with others, making oneself known to them and acquiring knowledge and understanding of others.
 4. The ability to speak fluently and express oneself in a direct manner easily understood by others.

5. An awareness of the needs, feelings and wants of others in the absence of spoken words.
- (B) Explain how communication functions in interpersonal relationships.
- (C) Why is communication important in family relationships?

APPENDIX D

APPLICATION OF PRINCIPLES TEST

There are two parts to this test. On Part I select statement A, B, C, or D and place the letter in the blank nearest the numbered items. On Part II select from statements 1 through 23 the statement which supports each answer in Part I. Place the number of the statement in the blank to the left of items answered A, B, or C.

Part I

Directions: Below are listed 30 statements which you are to relate to the case of Josh and Carla and a key consisting of four conditions. Read each statement carefully and in the first blank to the left of each place the letter indicating the condition given in the key which best describes the statement.

KEY: Mark the statement -

- A. If the condition described in the statement is conducive to successful marital relationships but is absent in the case of Josh and Carla.
- B. If the condition described in the statement is conducive to successful marital relationships but represents a likely cause for unhappiness in Josh and Carla's case.
- C. If the condition described in the statement is conducive to successful marital relationships but it is impossible to tell from the facts given whether the condition described is a cause of Josh and Carla's unhappiness.
- D. If the condition described in the statement is not clearly related to successful marital relationships.

Example

- 4 B Meaningful communication makes marital adjustment easier.
1. Josh enjoys a good argument.
2. Differences in viewpoints can be resolved through productive discussions.
3. An engaged couple who has the same religious affiliation has a better chance for marital success.
4. When a couple has similar socioeconomic backgrounds marital adjustment is easier.

- ___ ___ 5. To solve their difficulties through discussion Josh and Carla must be good listeners.
- ___ ___ 6. Openmindedness between Josh and Carla is an asset in coping with their problems in interpersonal relationships.
- ___ ___ 7. Josh and Carla, as an engaged couple, need to work out differences in role concepts.
- ___ ___ 8. To adjust to Carla's behavior Josh must utilize those responses which have the right kind of effect upon her behavior.
- ___ ___ 9. Josh is the dominant person in the relationship.
- ___ ___ 10. Self-acceptance is basic to successful relationships with others.
- ___ ___ 11. An engaged couple who sees each other in a variety of circumstances is in a better position to understand each other's personality.
- ___ ___ 12. Josh's parents are respectable, common people.
- ___ ___ 13. An engagement relationship where each individual expresses his needs, hopes and plans may lead to increased understanding of each other.
- ___ ___ 14. During the engagement Josh and Carla should get to know their prospective in-laws well.
- ___ ___ 15. Marital relationships are more meaningful when each has a realistic concept of the other's personality.
- ___ ___ 16. When an engaged couple have near equality of emotional involvement the chances are at a minimum that one person will dominate the relationship.
- ___ ___ 17. Individuals who are flexible and adaptable can continue to grow personally and establish meaningful interpersonal relationships.
- ___ ___ 18. A desire to identify with and understand others is important in interpersonal interaction.
- ___ ___ 19. Logic without regard for personal feelings provides a good basis for solving personal problems.
- ___ ___ 20. Meaningful communication with one's family helps a person communicate with others.

- _____ 21. Religious differences when resolved during the engagement period increases chances for marital success.
- _____ 22. An engaged couple that discusses issues and differences freely has a better basis for successful marital adjustment.
- _____ 23. An engagement without disagreements is indicative of marital success.
- _____ 24. The absence of a desire to change another person is indicative of psychological acceptance of that person.
- _____ 25. It is important for an engaged couple to feel comfortable in one another's presence.
- _____ 26. Respect is an important element in a mature love relationship.
- _____ 27. In a marital relationship it is important that each individual has a concern for the growth and development of the other.
- _____ 28. In family relationships children have an opportunity to develop a positive concept of self when they are valued for themselves.
- _____ 29. Carla wants a permanent home.
- _____ 30. In an engagement relationship it is important that each person respects the goals and values of the other.

Part II

Directions: Check those statements which you marked D in the preceding part of the test. For the ones not marked D select the principle below which best explains your answer to statements marked A, B, and C in Part I of the test. Place the number of the principle in the blank to the left of each letter. Some principles may apply to more than one statement.

Select from this group the principles that explain statements 1 through 6.

1. Knowledge and understanding of others is acquired through an awareness of the needs, viewpoints, and experiences of others.
2. Similar cultural experiences may facilitate communication and the empathic process in interpersonal relationships.

3. Openness to new experiences leads to greater understanding and acceptance of others and to more varied approaches to problem solving.
4. Communication is an avenue through which individuals can solve problems and clear up misunderstandings.

Select from this group principles that explain statements 7 through 11.

5. A positive self-regard makes it easier to accept others and to relate to them effectively.
6. The most real way of knowing a person is through understanding him from his own point of view in light of his own unique experiences.
7. Similar views concerning marital roles may lead to empathy, respect and increased understanding between husband and wife.
8. The empathic process involves knowledge of the other person and the ability to react to that person in a way that enhances his sense of well being.

Select from this group principles that explain statements 12 through 16.

9. Knowledge and understanding of people form a basis for communication, empathic ability and respect for them.
10. To be understood by others the individual needs the ability to make his innermost self known.
11. In successful interpersonal relationships each individual has a genuine concern for the well-being, growth and development of the other.
12. To empathize with another one must be able to perceive how that person feels.

Select from this group principles that explain statements 17 through 21.

13. A healthy personality is open to new experiences and values them as assets in personal development and in relationships with others.
14. Adaptability involves understanding and knowledge of another person and the ability to deliberately identify with him.
15. Parents who listen to and understand their children and express themselves effectively foster empathic ability and make it easier for the children to express themselves and understand others.
16. The earlier a pattern for resolving conflicts is established the greater the chances for successful interpersonal relationships.

Select from this group principles that explain statements 22 through 26.

17. When individuals in a relationship value human worth and dignity there is opportunity for each to develop a feeling of security and worth.
18. Accepting a person and treasuring his individuality involves loving him unconditionally.
19. Empathic ability is developed through effective communication.
20. To feel accepted and worthwhile contributes to one's sense of well being and ability to relate to others in a meaningful way.

Select from this group principles that explain statements 27 through 30.

21. It is easier for an individual to achieve his potential when those close to him understand and accept his aspirations.
22. The emotional climate most conducive to the development of a healthy concept of self is one in which the individual is valued as a person of intrinsic worth.
23. Unless there is a concern for the well being of the other, a person may dominate the relationship.

THE ENGAGEMENT CASE OF JOSH AND CARLA*

Note: This case is fictitious but bears some resemblance to cases encountered by Marriage Counselors. Carla is 19 and Josh is 22; both have attended college but only Josh has graduated.

Josh and Carla sought a counselor because their engagement was in danger of being broken. They were quarreling almost constantly, except when both determined not to discuss explosive topics, and when they quarreled they settled none of their differences. They were becoming increasingly uncomfortable in each other's presence. Carla especially was feeling a vague sense of dread before each date, while Josh was aware of increased anger and hostility toward Carla. Both young people were dismayed by these ambivalent feelings because they thought themselves to be truly in love.

Josh's characteristic way of responding to the tense situation was to become angry and make critical, cutting remarks. He liked to argue in what he considered a convincing manner, but which Carla considered as a way of "talking her down." She responded to his angry arguments with resignation and withdrawal into silence, as she said, "so as not to cause any more trouble." These silences he interpreted as being "pouting" but she explained as being attempts on her part not to burst into tears. Josh couldn't stand her tears!

With this much background the counselor said: "Tell me about your latest difference of opinion." And this was the story that followed:

The quarrel was about the wedding. Carla's mother is deceased and her oldest sister (who has been the homemaker since her mother's death) expected them to have a large church wedding in Carla's church (Episcopal) in her home town. A dance at the country club is to follow the reception. Josh has no patience with persons who want to "put on a show" by having five bridesmaids and three hundred fifty guests! Besides his family might feel uncomfortable at such an affair because they are in his words "Respectable but common people" who belong to a different church (Church of Christ). (Josh, himself, doesn't attend any church regularly.)

Josh became critical of Carla's sister saying, "What right did she have to dictate their wedding plans? It isn't her wedding." At which remark Carla explained that she too wanted a large church wedding with a double ring ceremony and a large reception and dance to follow. Her other married sisters had done just this and she wanted the same. Josh insisted he could not understand why "women always want to make a big production out of getting married."

Josh had immediately taken issue with her on the double ring idea saying, "No one will catch me wearing a wedding ring. Besides, in my

*This case study was briefed by Dr. Hazel Ingersoll, Professor of Family Relations and Child Development, Oklahoma State University.

job as construction engineer, wearing a ring is dangerous because it may get caught in the equipment."

The vehement way Josh reacted to the idea of a double-ring ceremony all but reduced Carla to tears which she stifled by withdrawing into silence. Sensing that her feelings were hurt, Josh tried to make up with her but with no results. So he tried for an hour to convince her by what he considered "logical and lucid reasons" why a small wedding in the Alma Mater chapel, with the immediate families and a few close friends (and of course not a double-ring ceremony) would be far more satisfactory for both of them. He said he knew it was the girl's responsibility to plan the wedding but it should not be run by her older sister!

Needless-to-say Carla was not convinced so Josh finally took her to her door and when he tried to kiss her goodnight she avoided his caress and slipped away in hurt and hostile silence. And once again they had settled nothing.

Observing that Josh was more verbally facile than Carla the counselor asked to talk to them separately. This was Carla's story:

Carla was the youngest of six daughters. Her father was a well-to-do rancher who lived near a prosperous city. During childhood Carla had tried very hard to gain her father's approval and affection but he tolerated her and described her as his "last disappointment." (He had no sons). Because he needed ranch hands and because she liked to be near him she developed out-door skills and patterned her behavior more after his than after her mother's. She became, in a sense, his "boy". He accepted her help and was proud of her in a sense but still showed her no genuine warmth which she craved.

Carla's mother was chronically ill during Carla's childhood and seemed tired and over-worked. She was impatient with Carla and seemed not to have time or energy to raise her. This responsibility fell largely to the oldest daughter, who took over the household after the mother's death when Carla was ten. Carla wishes she could have been close to her mother but the sister is the substitute in her affections. However, in Carla's mind her father still looms as "a giant of strength, a masterful but terrifying figure" whom she still admires and fears. She had hoped to marry someone with his qualities of strength but one with gentleness and warmth. Josh seemed to fit this ideal when she first met him. Now she is uncertain about this.

They were both on a guided tour when they met last summer. They fell in love at once and were together as much as possible in the three weeks time. When the tour ended they became engaged. Carla went back to go to college (first year) but couldn't bear to be apart from Josh so in January she took a typist position in Dallas to be near where he was working on a construction job. They saw each other on week-ends but neither of them had friends there and Carla isn't sure she will like to be a "nomad" because marriage has always meant to her a permanent home in a respectable neighborhood where they could have children and "grow some roots." It was hard for her to

understand why Josh preferred this work to some other.

This was another thing she wouldn't talk to him about. He took it for granted that the wife went with her husband unquestioningly and was content wherever he was. She even would like to suggest they go to her home and help her father run the ranch. She herself had knowledge and experience in ranching and Josh could fit in very well since her father had no sons. She had never had the courage to suggest this plan to Josh, however.

Josh's story was similar to Carla's about their early romance. He had thought her "the one fate had meant for him." He fell in love at first sight with her blond hair and Hollywood figure. She had been his ideal in every way - until recently - she seems to have changed! But of course, Josh is confident once they are married love will solve all the differences. Carla's family has too much influence on her, Josh declares. She keeps quoting her father to him and she is letting her older sister make the decisions about their wedding. All the expense and trouble is a waste of time and energy. Besides, where could one put all those wedding gifts in a trailer? Or in a rooming house or where they are to live as he moves from job to job? He can't seem to get Carla to listen to reason! She can be so stubborn and "pouty" when she wants her own way. As the youngest child he thinks she is spoiled.

He was never indulged when he was growing up, declared Josh. Growing up in a large Southern city in a "poor but, respectable" family he found himself fatherless at age 4. A stepfather soon took the father role, but Josh resented him greatly. He gave Josh no real affection nor attention. Josh shows bitterness toward his mother for letting the stepfather be so indifferent to him. He had hoped to get warm consideration and ego-support from the girl he married. But Carla wants to get more than to give affection, he thinks, and she even refuses his love because they have had a few words! He wished she would respond more to his arguments. He enjoys a good argument. And he can't understand why she punishes him by withdrawing her love. Moreover, her intensive interest in helping her father on the ranch makes him wonder if she is as feminine as she appears. He would prefer a girl who would make a good mother to his children when they settle down. For several years ahead his job will require being on the move a good deal, but after that perhaps he could get a more stable job. If Carla really loved him, he reasons, she will go with him wherever he goes!

APPENDIX E

PROCEDURE FOR TEACHING CONCEPTS

CONCEPT I

Concept: Empathy - The quality of interpersonal relationships in dating, in the family, and in other relationships is greatly influenced by the degree to which the empathic process is involved.

PROCEDURE

- I. All students will be assigned two references, the one by Burgess, Wallin and Schulz and another of their choice.

References:

1. Blood, Robert - Marriage, Ch. 1, pp. 23-24.
2. Burgess, Wallin and Schulz - Courtship, Engagement and Marriage, pp. 336-338.
3. Foote, Nelson N. and Cottrell, Leonard S. Identity and Interpersonal Competence, pp. 54-55.
4. Landis, Judson - Building a Successful Marriage, pp. 108-109.

II. Making students aware of need

Students will be given the following case.

Ben has been dating Sue for a year and they are considering marriage. They have not, however, reconciled all of their ideals and standards. Ben regards himself as a "liberal" in his sex standards (morals) in that he thinks everyone should make decisions about "how far to go" according to his own convictions. Ben, however, sets high standards of sex ethics for himself, and he has chosen Sue because she too is strict in her observation of moral codes. Sue, on the other hand, has pronounced ideas of what is "right and wrong" for everyone and she has no patience with persons who are more "liberal." She thinks Ben is too tolerant.*

What position would you take if you were involved to the extent of Ben or Sue? Why? (You may choose as many as you wish.) Circle the number of your choices.

1. Decide not to discuss the issue any more?
2. Recognize that to me there is a rightness about morals but that people of different circumstances and experience might view morals differently in terms of right and wrong?

*From case materials furnished to author by Hazel Ingersoll, Professor of FRCD, Oklahoma State University.

3. Recognize that under certain circumstances you could believe and behave differently?
4. When the subject is brought up just ignore it?
5. Point out that it is hurtful as well as shocking to realize that some people have such loose morals?
6. Attempt to change the other person's viewpoint to coincide with your own?
7. Recognize that "right is right and wrong is wrong" and anyone should know the difference.
8. Try to recognize and appreciate what makes the other person feel as he does?
9. Read about the background and experiences of people with different moral standards than your own?
10. Acquaint one's self with people of different moral standards and try to understand their viewpoints?

Now check () the behaviors which you feel would develop empathy.

To students: Now before we evaluate the behaviors you have checked let's clarify our understanding of empathy at this point.

III. Acquisition and Analysis of Data

Students will be asked to indicate by written responses (a few statements or an example) their understanding of what empathy is. Several different definitions written by students will be placed on the board.

Definitions:

Empathy is the process of role taking. It involves the ability to place oneself in another person's position and perceive accurately how he feels.

Empathy is a form of knowing which promotes understanding between people.

Empathy as a process operates in interactions among people.

Instructor read excerpt from To Kill a Mockingbird, p. 34.

"You never really understand a person until you consider things from his point of view - until you climb into his skin and walk around in it."

Good will is inherent in empathy. One must respect differences.

Each student will be asked to give written examples of empathy or lack of it in dating.

John and Mary have gone swimming at the beach. John has to get the car back for his family to use by four o'clock. Mary wants to stay longer and feels that he wants to go home because he isn't having a good time or because he doesn't enjoy her company. She feels he is inconsiderate to leave so soon. (Lack of empathy.)

Mary rejects Carl's intimate advances when on a date. He perceives her behavior as a result of her values and standards rather than as a reflection of his capacity to attract girls or her affection for him.

Statement of Problem

According to our readings and class discussion thus far, empathy is a very important process in human relations. What are some questions we need to answer in relation to empathy and our effectiveness in relationships with others? What could we learn that might help us empathize with others?

How can empathic ability be developed?

How does empathy function in real life situations?

(Write on board.)

Analysis of Case (The case of Ben and Sue to which students reacted earlier.)

Now let's go back and look at your reactions to the case of Ben and Sue. Let's look at each of the behaviors and decide whether or not it is related to the empathic process. If it is, let's determine how.

Students will discuss each one and then the instructor will guide them to summary of principles. (Each student will formulate in writing some of the principles he has been made aware of through the analysis of the case and other learning experiences.)

Empathy is developed through confiding in the other person and discussing issues freely.

An understanding of others' attitudes and motives develops through communication.

People who rate high in empathy are sensitive to and aware of the needs of others.

People low in empathy have been found to be less flexible and spontaneous.

Parents who can communicate and express themselves foster empathic ability in children.

Experience with a variety of different people and things helps one gain empathy.

Motivation for empathy is very important. There must be a desire and willingness to take the other person's role.

Learning about the backgrounds of others and viewing their behavior from the standpoint of the experiences they have had is good practice for developing empathy.

Assuming the role of another as it is requires adaptability.

Adaptability involves understanding and knowledge of the other person and the ability to deliberately identify with another.

To empathize one must be open to new experiences and value them as assets in personal development and in relationships with others. A person with capacity for empathy envisions change and is challenged by it.

Putting Principles into Practice - Sociodrama*

Now let's see how some of these principles look in operation. First we'll do role-playing.

Role-playing situation:

Ken comes home from work and sits down to read the paper. In a few minutes Kay calls him to dinner. While they are eating Ken isn't too talkative but listens rather passively as Kay tells about her activities of the day. Near the end of the meal Ken gets up to get more milk from the refrigerator. In the process he knocks loose the egg tray on the refrigerator door. Two eggs fall, one breaking on the edge of the refrigerator and the other on the floor. Ken's temper flares and he

*Sociodrama is used here in the context described by Moreno who defines it as a discussion method combined with drama. He notes that:

. . . the group watches a few of its fellow members play out the roles in some real life problem. You talk about the way it is being done and suggest what might be different or better ways "to work things out."¹

¹J. L. Moreno, "Sociodrama," Psychodrama Monographs, No. 1 (New York: Beacon House, 1944).

mumbles something about stacking so much "junk" in the refrigerator.

Students will be asked to volunteer for the roles and the person acting as Kay will react to the situation.

Preparing class for observation

As a class we will look for these points:

1. Did or didn't Kay empathize with Ken?
2. What evidence is there that she did or didn't?
3. How else could the situation have been handled to show empathy?

Analysis of role-playing

Ken, how did you feel about Kay's reaction to the situation?
Kay, how did you feel about the way the situation ended?

To empathize Kay might clean up the eggs, indicating that he probably had had a rough day. She will understand that stresses and strains at work have been greater than usual and that his temper might be the result of what happened at work instead of reaction to her efficiency as a homemaker.

Lacking empathy in such a situation Kay might take his outburst personally and react with a show of temper to his insinuation that the accident resulted from her poor housekeeping (stacking the refrigerator too full) rather than from his nervousness, irritability or clumsiness.

Analysis of Case Study (To be done during class period - written by each student).

Jane and her husband, Bill, live in a middle-class suburb. They have three small children, all less than school age. Bill is not a college graduate but is capable and ambitious. Jane indicates that she values these traits in her husband. He is a salesman for a large company but his work is largely confined to his home state. Sometimes he is away for two or three days and he often gets home late at night. Occasionally his work interferes with their week ends. Lately Jane has been complaining about his being away so much and getting home so late. Bill explained that he had made several contacts which he considered good prospects for a "sale" and that it was difficult to break up his conferences to come home at a regular hour. Besides he sometimes had book work to do when he got back to the office. Bill feels that she should appreciate his efforts for the family. Jane said that he was always about to make a sale, which usually fell through and that he should spend more time with his family. Besides, financial support, she says, is not the only kind she needs. She would like help with the children.

Questions for Analysis of Case

1. Identify the incidents which show lack of empathy.
2. What are some understandings about the way Bill feels that Jane must have in order to empathize?

Bill feels a responsibility for providing for his family. He feels that his success as a man is measured by his success in his job.

The early years of marriage are the ones when the husband is working to establish himself in his career.

Bill feels he must make up in effort what he lacks in education.

3. What are some understandings about the way Jane feels that Bill needs to have in order to empathize?

Jane feels trapped with three small children.

She feels neglected by her husband.

Jane feels unappreciated.

4. What are some specific ways in which Jane and Bill can develop empathy?

Discussing their feelings with each other. Talking out their **differences.**

Bill could care for children when he is home on week ends while Jane does something else.

Jane could leave the children with grandmother and go with Bill on one of his two-day trips.

5. If the present relationship continues what type of family life will they likely have? Give the principles that explain your answer.

A Second Role-Playing Situation - Parent-Youth Relationships

Ann is a second semester freshman in college. She has one brother six years older who has finished college and is successfully married. Ann is an attractive girl, popular and a capable student. She has been dating John, a sophomore majoring in business administration, for about six months. Ann feels that she is in love with John, though he isn't exactly the handsome type she has dated before. He is slightly too heavy to be considered handsome. Ann and John have decided to become pinned with the possibility of marriage in a year. Ann is not quite sure about the reaction of her parents, though they have said that John is a fine boy.

Ann's parents are prominent, well-respected citizens of the community. They are close to Ann who has never been away from them for any long period of time. She attends college near her home town but does live in the dorm.

Ann's parents have never taken Ann's romance with John seriously. In fact, they consider him a fine fellow, as they have said, but not for Ann. They would prefer that she finish college but would not object to her marrying within a year or two if the boy were right for her. For Ann they would like a clean-cut, nice looking, ambitious fellow who would fit in well with the rest of the family.

As the role-playing begins Ann explains her plans to her parents.

Preparation of students for observation

1. What evidences were there that Ann did understand the feelings of her parents?
2. What evidences were there that the parents understood Ann's feelings?
3. Did you find yourself identifying with either Ann or her parents? Why?

To Ann: Did you feel that your parents understood your feelings? Why? How did this affect your attitude to the situation?

To Parents: Did you feel that Ann understood your feelings? Why or why not? How do you feel about the situation now?

To class: What were some of the processes through which empathy was developed? Listening, asking questions about feelings, etc.

Now on the basis of our role-playing and case studies what can you conclude about the empathic process and interpersonal relationships?

Conclusions will be written by the students, discussed and refined.

Example of conclusions expected:

Marital adjustment is made easier when husband and wife empathize with each other.

Empathy with another makes it easier to work out differences.

When empathy operates to a high degree one may sense the needs of another without words.

Film as a Resource. Who's Right? (Written analysis will be done by students.)

1. What factors in the film operated to block the empathic process?
 - a. Husband talked all the time about his job.
 - b. Wife paid little attention.

- c. Unable to communicate, express how each really felt.
- d. No deliberate attempt to understand, identify.
- e. Lack of sensitivity to each other's desires and needs.

2. Why did each partner behave as he did?

Both on defensive, each seeking to fulfill own needs, unaware of needs of other, lack of self-understanding.

How are these factors related to empathy?

Need to understand needs and values of others, to understand motives, in order to "know" the other person in a way that enables one to empathize.

IV. Arriving at Generalization

Each student write out two or three, one if possible, broad statements concerning the empathic process and relationships with others.

Now, in our earlier discussion it was brought out that good will is an inherent part of empathy. Who can explain why this must be so?

A person with the ability to empathize may be keenly aware of another person's vulnerable points and use this to hurt that person.

V. Evaluation

CONCEPT II

Concept: Respect - Success in interpersonal relationships is related to one's understanding of and respect for people as individuals.

PROCEDURE

- I. Making students aware of need - (Concept seeking begins with the realization that the concept in hand is not adequate to fit observed events. Casual observation and description is followed by recognition of those aspects which begin to seem important.) (Brandwein, Watson, and Blackwood)

Each student writes a composition: "An incident showing Respect in Family Living" and "What Respect Means to Me."

Teacher will guide discussion of ideas on respect. Key questions will be: What is respect? What are indications of respect in interpersonal relations? Why is it important?

(It is expected that students will become aware of the need to examine, extend and refine the concept.)

- II. Statement of Problem - (The problem, something to be explored, to seek the answer to must be clearly stated.)

What do people do when they respect the dignity and worth of the individual? In what ways might respect relate to success in family relationships?

Teacher will attempt through questions to guide students to an awareness of and statement of the problem. Students might be asked: What do we need to know in order to increase our understanding of respect? What do we need to know to help us increase our ability to understand and respect others?

- III. Gathering Data - Carefully gathered data are the basis on which explanations are built. Learning situations should be provided to make it possible for learners to come in contact with numerous and vivid, clear-cut examples of things, persons, processes and relationships for which concepts are being achieved. The examples of things, persons, processes, and relationships should be met so far as possible through direct experiences. The direct experience should be supplemented by vicarious experience obtained by means of motion pictures, radio and televised programs, dramatizations, lectures, and types of printed materials. (Burton, Kimball and Wing)

LEARNING EXPERIENCES:

Reference list:

1. Lee, Harper, To Kill a Mockingbird.
2. Blood, Robert, Marriage, Ch. 4, p. 97; Ch. 21, p. 446
3. Cavan, Ruth, American Marriage, Ch. 6, pp. 113-117.
4. Cavan, Ruth, Marriage and Family in Modern World, Ch. 8, p. 187.
5. Landis, Judson, Building a Successful Marriage.
6. Landis, Paul, Making the Most of Marriage, Ch. 10, p. 157, 163.
7. Simpson, George, People in Families, Ch. 11, pp. 203-204.
8. Overstreet, Harry A., The Mind Goes Forth, pp. 49-65.

Problems for Group Work

Group I - Read and analyze To Kill a Mockingbird.

Excerpt from the book examples of behavior or other evidence which indicated that Atticus Finch respected his children and his fellow men.

Evaluate Atticus' parenting in terms of success with his children.

Example of Respect:

When "Scout" pointed out to Atticus that regarding his defending a Negro, "most people seem to think they're right and you're wrong." He replied, "They're certainly entitled to think that, and they're entitled to full respect for their opinions."

Jack said to Atticus, "You've never laid a hand on her." Atticus replied, "I admit that. Jack, she minds me as well as she can. Doesn't come up to scratch half of the time but she tries." (Respect for age, needs, ability of child, acceptance on a "who" basis.)

Group II - Analyze Case Study Case - A Dating Relationship

Nancy dated Jim all during her freshman year in college. He was good looking, popular and intelligent. Nancy was always proud to be seen with Jim. She felt that he was ambitious, had worthwhile goals and good judgment. Her parents, however, were not so enthusiastic about him because he drank and was of a different religion. Really Nancy always wished he wouldn't drink so much but hesitated to say anything. He often told her that she was naive and old-fashioned, that she should become more sophisticated in order to be accepted into the important social groups.

Nancy never quarreled with Jim, but when tired or irritated, he would say cutting things that almost crushed her, though he was very apologetic afterwards.

In general Nancy was not so happy as she had always been before but she attributed this to her parents' negative attitude. She could not, however, be as carefree with Jim as in other friendships and did not really feel comfortable being herself.

During the summer vacation Nancy dated Ed who was less glamorous and exciting than Jim. She was surprised at what a good time she had with him. He was considerate and seemed to like her just as she was. Suddenly Nancy realized that she was her old self again, happy most of the time, comfortable with herself, her family and her friendship with Ed.

Questions on Case

1. What evidences are there of lack of respect in the case?

Jim seemed to belittle and dominate Nancy.
 Jim indicated Nancy was naive to possess the values she held.
 He said cutting things to hurt her, inferred she wasn't too intelligent.

2. How did the lack of respect seemingly affect the people involved and the relationship?

Made relaxed rapport difficult.
 Made it difficult for Nancy to feel free to be herself.
 Blocked communication. Evidently Nancy did not feel secure enough in the relationship to stand up for her beliefs.
 Jim dominated the situation or relationship.
 If Nancy feels uncomfortable around Jim she would probably feel the same way around his family and friends.

3. Are there any evidences that Nancy respected Jim? Explain.

Valued his goals, ambitions, judgment - awarded him masculine superiority but not real respect and unconditional acceptance.

How important is respect for the male in marriage? Why?

He usually determines the status of the family and women, in general, value professional achievement in husband. Some evidence indicates marriages are more successful if the male is slightly dominant. Lack of respect by the woman may lead to attempt or tendency to dominate. At the present time culture of the U.S. supports male in dominant role.

4. Contrast Nancy's relationship with Ed with that of Jim. How do they differ?

Ed was considerate, accepted her as she was.

What influence did Nancy's relationship with Ed have on her?

Happy, comfortable with self, family, and friendship with Ed.

5. What are some conclusions you might draw from this case in relation to successful interpersonal relationships?

To feel accepted and respected contributes to one's sense of well being.

The presence or absence of respect influences how a person feels about a relationship and about himself.

Respect for a person involves a concern for his welfare and helps him become what he is capable of being.

Group III - Role-playing (Respect for wife-homemaker role)

Chuck and Bea have been married almost three months. After working for two years before their marriage, she decided to become a full time homemaker after marriage. She plans and markets intelligently, is an efficient homemaker and belongs to a bridge club which meets one afternoon a week. Chuck has been employed for three years with the same company and is expecting an advancement soon.

It is in the evening and they are discussing finances. The main question is whether to make a down payment on a new car or to purchase a washing machine.

(Bea prefers the partner role to the extent that she prefers Chuck to think of her not as a dependent or one supposed to give one-sided domestic service to the husband, but as a partner whom he respects for making a real contribution to the marriage).

First scene - Chuck takes this position:

The one who earns the money should have the main say as to how it is to be used.

He implies Bea does not need a washing machine now because there are no children and she has nothing to do anyway.

Chuck hints indirectly that they could have both if Bea worked like Joe's wife.

He believes the husband should handle the finances, that when the wife needs money she can ask for it.

Questions - Bea, did you feel he respected you and your role? Why? How did it make you feel to not be respected?

How could the situation have been handled to show respect? Let's role play it again.

Second scene - Chuck takes the position

Wife should have equal vote in spending money.

Wife should have equal amount of money for spending to do as she likes with no questions asked.

Really efficient wife carries her share and should receive full credit and respect for doing so.

There is dignity and value to homemaking.

(Use questions similar to first scene to analyze situation).

Group IV - Reports on what authorities say about respect in relation to interpersonal relationships.

Group V - Observations - Record instances of respect shown by students, teachers, parents, husband-wife, etc.

1. Record the exact behavior as it happened.
2. Indicate the specific behavior that you believe indicated respect. Explain.
3. How did the situation turn out?
4. Can you draw any conclusions on the basis of your observation? If so, what?

Some discussion will go on after each presentation. A guided class discussion will follow the presentations through which students will analyze experiences, illustrations and meanings.

Students will be asked to write down any statements on respect that are meaningful to them and hand them in. (Students are asked to state their understanding - meaning growing into concept - in their own terms).

IV. Analysis of data - Now we wish to determine - In what ways might respect relate to success in family relationships? (Students write responses).

Key Questions

- What are some ways of showing respect?
- Why is respect important in family relationships?
- What are some principles involving respect that might serve as guidelines for successful family or interpersonal relationships?

Responses and Activities

- Students give ways, place on board.
- Students relate respect to successful family and interpersonal relationships.
- Students write down principles that support concept.

The principles will then be presented to the class by the students, discussed and evaluated to separate opinions from facts, locate misconceptions, etc.

Example of Principles - Respect denotes the ability to see a person as he is and to value his individuality.

Without respect a person may dominate the relationship and interfere with the growth and development of the other person.

Respect for another involves understanding of the other person's needs and the ability to love him unconditionally.

Students asked: "Now in view of these principles what can be concluded about the ways respect might relate to success in family relationships?"

Possible Responses - Respect for husband or wife usually involves understanding of him or her and a concern for the growth and development of one's spouse.

Whether or not parents respect children influences how children are disciplined.

How children are disciplined influences how they grow and develop.

USE OF FILM AS RESOURCE - To help students recognize principles in operation and draw inferences as to cause-and-effect.

Students will analyze film to determine presence or absence of principles and effect on the development of the child or on the husband-wife relationship.

Preface to Life (Each student will do written analysis of film).

(This film is designed to illustrate parental influence on a child's developing personality. Portrayed are the effects of an overly solicitous mother and an overly demanding father. In contrast the film shows the healthy childhood resulting when both parents accept and respect their child as an individual. Indicated also is dominance in husband-wife relationship).

1. What evidence is there to indicate Michael's parents were not thinking of his best interests in terms of development?
 - a. Mother found it difficult to accept his growing up-- his first suit, etc. Did not recognize his need for independence as a toddler, as older child.

- b. Over-expectation of father - "How many home runs did you hit? Better luck next time!" Impatience in son's eating - "Eat! Eat!"
 - c. Discussing new baby in his presence, arguing over what it would be, etc.
 - d. Father cruel to Michael in boxing scene - made a lesson of it, rather than enjoying relationship with son.
2. What might have been the basis for Michael's father's ambition for his son?
 - a. Realizing own ambitions through son - ego extension.
 - b. Lack of respect for needs, uniqueness of child.
 3. How would Michael have developed under the influence of an over-demanding father? Over-solicitous mother?
 - a. Insecure, immature, irresponsible.
 - b. Inadequate in role of husband and father.
 4. What techniques used indicates the parents (in last of film) accepted their child as an individual?
 - a. Used reasoning and explaining about new baby.
 - b. Expected obedience, but obedience with understanding and willingness. (Example - Michael welcome in bed with parents).
 5. What type of relationship did Michael's parents have in the first part of the film? What evidences were there of respect or lack of it?

Now on the basis of the film write down some statements about the relationship of respect to personal development.

Example - Respect for another person is closely related to what that person thinks of himself (self-concept).

When an individual grows up in a family that values human worth and dignity, he has the opportunity to develop a feeling of security and self-worth.

V. Arriving at Generalization

Students write down any very broad conclusions you feel are justified on the basis of learning experiences in relation to respect and interpersonal relationships.

Students will be helped to analyze, rewrite and extend the generalizations that they write until they are guided to the development of the major generalization.

VI. Evaluation

CONCEPT III

Concept: Healthy Concept of Self. The ability of the individual to establish effective interpersonal relationships is dependent upon a healthy concept of self.

I. Making Students Aware of Need

Students given questionnaire related to the self.

The Self

1. If you were told that you could have any three wishes come true, what would you wish?
2. What would you like most to do?
3. If you could make your face and body to suit your own desires, what would you change about yourself?
4. What physical attributes would you keep as they are, if any?
5. If you could be born again would you prefer being a boy or girl? Why?
6. If you had your choice of being anyone in the world, past or present, whom would you like to be? Why?
7. List what you believe to be three deeds which you consider yourself incapable of doing.
8. List three things which you do very well.
9. If you had a year to live and \$50,000 to spend, how would you spend it?
10. What do you consider to be your best traits?

What do your answers tell you about your concept of self? Do you have a healthy concept of self? Why or why not?

Written response by students. What is the self-concept? Why is it important in human behavior? How is it related to interpersonal relations?

II. References (Each student read at least two)

1. Moustakas, Clark E., The Self (New York: Harper & Row, 1956).
2. Moustakas, Clark E., "Growth of the Self," The Alive and Growing Teacher, (New York: Philosophical Library, 1959), pp. 1-17.
3. Cole, L. E. and Wm. Bruce, Educational Psychology.
4. Lindgren, Henry C., "The Development of Personality: The Self," The Psychology of Personal and Social Adjustment, (New York: American Book Co., 1953), pp. 21-38.
5. Hall, Calvin and Gardner Lindzey, Theories of Personality (New York: John Wiley and Sons, Inc., 1957), pp. 467-499.

Students will formulate generalizations based on readings.

III. Application of principles or generalizations to case.

Students given copy of the case of Isabel.* Students will select five principles based on readings relating to the self-concept and relate them to the case.

Example

Principle - One's self-concept directs one's behavior.

Isabel perceived herself as fat and ugly, with an incurable disease. She felt that no one would want to date her. Consequently she strived for good grades, refused dates and was shy and uncomfortable around boys.

Group Presentations - Four groups of five each will present panel discussions. Each group will select a chairman who will introduce the topic and summarize the discussions.

Group 1 - Discuss factors that influenced the formation of Isabel's self-concept, and explain how they influenced it. Give principles that explain these influences.

Factors -

1. Position in family.
2. Rivalry with sister, comparison by family.
3. Parental expectations (-reflections "little lady," "star," "anti-social").
4. Accelerated growth.
5. Lack of athletic skill.
6. Disability (diabetic).
7. Physical build (large).

Principles that explain influence -

1. The individual learns who and what he is from interactions with those who surround him.
2. The family constitutes the first social mirror that reflects the self. It has a lasting influence.
3. Unconditional acceptance by parents contributes to the development of a healthy concept of self.
4. When individuals are held in high esteem by others it enhances self-respect.
5. The greater the discrepancy between the perceived self and the ideal self, the less adequate the adjustment.

*The author is indebted to Dr. Hazel Ingersoll, Professor of Family Life and Child Development, Oklahoma State University, for the use of this case.

Group II - Discuss factors that were influential in changing Isabel's self-concept. Give principles that explain the change.

1. Change in name.
2. Acceptance of a job.
3. Refusal to tell people she was diabetic.
4. Change of location.
5. Reaction of friend, teacher.
6. Effort to socialize, date.
7. Unconditional acceptance by George.
8. Success in job.
9. Loss of weight.
10. Broadened interests.

Principles -

1. Responses of associates may change perceptions of self.
2. When individuals are held in high esteem by others it enhances self-respect.
3. The best way to change behavior is to effect alterations in the concept of self.

Group III - Discuss the relationship of the self-concept to Isabel's behavior. How self-concept influenced behavior and principles that explain the influence.

1. Excelled academically.
2. Shy, uncomfortable around boys.
3. Refused dates in high school
4. Unsuccessful dating first year in college.
5. Temper tantrums.
6. Offensive (felt different).
7. Cried and worried about the future.

Principles -

1. Ways of behaving are consistent with the concept of self.
2. A person's perception of self determines his perception of the environment; these determine what his behavior will be.
3. One's concept of self directs one's behavior.
4. A negative self-concept usually results in lack of confidence and lack of personal adequacy.

Group IV - Discuss principles that are supported in the case in relation to the formation and change of the self-concept. State the principles and give evidence supporting them.

1. The family has a marked influence on the formation of the self-concept through acceptance, rejection, reflection of self, expectations and values. (Example - Isabel's family valued athletics, scholarship; reflected to Isabel the social, physical self.)

2. A child learns at an early age who he is and what he is. (Called "little lady," excelled from first, "star.")
3. Accelerated development in girls often has a negative influence on the self-concept. (Taller than classmates.)
4. Period of adolescence is crucial one in the formation of the self-concept. (Lack of dates, physical characteristics made her feel undesirable.)
5. The self changes with learning and maturation. (As Isabel matured she became more social, interested in more than just academic work.)
6. Change in self-concept is gradual; the self is constantly emerging. (Change occurred over long period, self still in process of change, achieving potential.)
7. Response to one's behavior may change one's concept of self. (Reaction of friends, teachers.)

Class discussion led by teacher -

How can you explain Isabel's decision to change?

There is forward movement in the life of each individual. Strong desire to become self, narrow discrepancy between what one is and what one can become.
The real self is the deep source of growth?

How is the self-concept related to a healthy personality?

Sense of adequacy, self-confidence, self-acceptance.

How does concept of self influence relations with others?

Think well of self, think well of others. Positive self-concept enables one to relate to others in meaningful way.

IV. Formulating Conclusions

On the basis of the learning experiences thus far, what conclusions do you feel are justified concerning the following (give examples wherever you can).

1. Stability of the Self Concept. (Does it change, under what circumstances?)

The self may change as a result of maturation and learning. The self changes as it comes under many influences; it is constantly emerging.

The sense of self grows gradually and continues to expand as one participates actively in an ever-widening social environment.

The self-image as reflected by a social mirror may change the individual's perception of himself.

Change in the self-concept is less in adulthood than in childhood.

The period of adolescence is a crucial one in the formation of the self-concept and in the establishment of self-identity.

2. The Self-Concept and Individual behavior.

Most of the ways of behaving adopted by the individual are those which are consistent with the concept of self.

A person's perception of himself determines his perception of the environment, and these two in turn determine what his behavior will be.

When the individual is free to be himself his behavior tends to be consistent with his values.

One's self-concept directs one's behavior.

The best way to produce changes in behavior is to effect alterations in the concept of self.

3. Making of Self (Process and Influences).

The emotional climate most conducive to the development of a healthy concept of self is one in which the individual is valued as a person of intrinsic worth.

Individuals learn who they are and what they are from the interaction with those who surround them throughout life.

Because of the intense emotional interaction in the small nuclear family, the family has a marked influence on the self-concept.

The self-concept is influenced by acceptance or rejection by parents, name, ordinal position, mother's role and evaluation of others.

4. The Nature of the Self-Concept.

The self is a composite of the individual's thoughts, feelings, values and perception of his roles.

The self-concept may be divided into four aspects: the self-image (looking glass self), the ideal-self (self would like to be), self-esteem (feeling of self-worth), reality-self (real core of personality, potential for growth).

The self strives for consistency.

5. The Self-Concept and Healthy Personality.

The individual who thinks of himself as a worthy, adequate person is able to live productively and creatively.

Integrity of the self is the main source of strength in the individual.

As long as an individual accepts himself, he will continue to grow and develop his potentialities.

It is the real self, the central core within each individual, which is the deep source of growth.

- A healthy concept of self is associated with low anxiety, self-integrity and openness to experience.
- A positive view of self decreases fear of the unknown.
- The person who can see himself as he really is and can accept himself finds it possible to depend upon himself to achieve his goals.
- A positive self-concept usually enables the individual to cope with life and maintain good mental health.

6. Self-Concept and Interpersonal Relationships

- When an individual is held in high esteem by others it enhances his self-concept.
- Warm, accepting relationships with others contributes to the individual's ability to grow and change.
- Self-acceptance permits greater acceptance of others.
- Understanding a person from his own point of view in light of his own unique experience is the most real way of knowing him.
- To see a person as he sees himself is the deepest way to know and respect him.
- Self-love is inseparably connected with the ability to love another self.
- A person who thinks well of himself is likely to think well of others.
- A healthy concept of self increases the individual's understanding of others as separate individuals.
- A healthy concept of self enables one to react effectively to new experiences and to relate effectively to other individuals.
- Openness to experience results in a willingness to share one's personal life with others and to share in the personal experiences of others.

CONCEPT IV

Concept: Communication - Successful interpersonal relations are dependent on the ability of individuals to communicate with each other in a meaningful way.

References:

1. Whitman, Ardis, "Let Us Speak to One Another," Woman's Day, October, 1963, p. 38.
2. Landis, Paul, Making the Most of Marriage (New York: Appleton-Century-Crofts, 1960), pp. 11-14.
3. Jourard, Sidney N., Personal Adjustment (New York: The MacMillan Co., 1958), p. 312.
4. Overstreet, Harry A. and Bonaro Overstreet, The Mind Goes Forth, (New York: W. W. Norton Co., 1956), pp. 49-65.

Teaching Procedure:

1. Determining students' understanding of concept and creating an awareness of need for increased understanding of concept.

Show film - Marriage is a Partnership

Written analysis by students using the following guide:

1. In terms of family interaction what skill or process contributed most to the establishment of a successful relationship between the newly married couple?
2. How did this process contribute to successful relationships between husband and wife?
3. In what other ways might this skill contribute to successful interpersonal relations?
4. What were some principles illustrated in the film which if utilized would facilitate the acquisition of this skill?
5. Why is this skill especially important in marriage today?

Students turn in papers. Follow with discussion of film.

To Students: From our initial introduction to communication as a process in personal interactions what are some areas which might be explored further in order to better understand communication as an element in interpersonal relations? For example, in the film we saw the process in operation and how it benefited the marriage of the young couple. Thus one area of concern might be the importance of communication in marriage. What are some others?

Class then suggests more areas of concern. Some of them might be:

1. Factors related to the individual's ability to communicate.
2. Value of communication in interpersonal relations.
3. Factors that impede the communication process.
4. Productive and destructive communication.

II. Gathering Data

- A. All students read references 1, 2 and 4. Make note of any principles that relate to our broad areas of study or to the questions to be answered during our study of communication.
- B. Skit - Tape Recorded (Illustrate cultural differences, respect, defensiveness, ability to express self).

To students: Now that you have done some background reading, let's try to apply some of the things you have read to this tape recording of a conversation between a husband and wife. Here we want to direct our attention to the communication process rather than to the solution of the problem.

Here is an analysis sheet to be used in responding to the situation. Write your response on the sheet which is to be turned in and evaluated.

The class will then discuss the situation recorded on the tape.

SKIT Characters: Joan, the wife, age 23
John, the husband, age 25

Situation: John and Joan have been married two years. Their marital adjustment has been complicated by their lack of progress in reconciling their differences concerning role concepts. Joan is predisposed toward the partnership role which combines career, marriage and parenthood. She has a college education and has been working as a buyer in a department store since their marriage. John conceives of Joan's role as that of companion, wife-mother. He is in business and hopes to become a junior executive soon. They are now involved in a discussion of the problem.

John: The fact remains that a woman's place is in the home. Besides, with your working two nights a week and on Saturday, we haven't any home life.

Joan: I see no reason why I shouldn't work, at least until we have children or until you're making enough for us to live on and buy some of the things that we need such as furniture and a new car. My mother always worked.

John: But you're never able to attend when the company has a picnic or some other get-together. And we can't golf with the other couples on Saturday afternoon.

Joan: I think that getting ahead financially is more important than our social life right now.

John: Our social life is very important if I expect to get promoted. You need time to socialize and make friends with the other wives. A wife should be an asset to her husband in his professional advancement. I wish that you would socialize more. My mother always went places with my father and knew how to make the right social contacts. She often went with him on business trips.

Joan: I'm not the country club type. If some women want to waste their time that is their business, but I'm not going to.

John: Look Joan, in a corporation the wife is important to her husband's success. She has to be sociable, intelligent and a good hostess. When I married you I hoped that you would be a partner with me in my job. I want to be a success and it will be difficult without your help.

Joan: But John, I don't feel comfortable around the wives who socialize all the time. They're not my type.

John: You'll get used to them. A person just has to learn the rules of the game.

Joan: Learn how to be snobbish you mean?

John: No, but a wife has to learn how to make the right contacts and how to make a good impression on the senior executives.

Joan: To me that seems so dishonest. I mean to select one's friends for professional reasons. That kind of life just doesn't appeal to me. When I am working I feel that I'm doing something worthwhile and I enjoy my friends at the store.

John: I realize that you're a capable person and need to use your talents. And I know you enjoy your profession, but if I'm to assume the major financial responsibility for our family don't you think that my professional advancement should come first? I want you to work but could you arrange your schedule so that you would be free to participate in part of the activities?

Joan: Maybe I can arrange to work less so I will have more time for other things.

Analysis of Skit:

1. Describe what you believe to be the cultural backgrounds of John and Joan.

John - upper middle, lower-upper, father in business, awareness of social status.
 Joan - middle class, high respect for money, feels financial obligation, needs security.

2. Did the differences in background make communication difficult? How? Examples.

Joan perceives social rules as snobbish, socialization as waste of time.

John sees socialization as integral part of his profession.

3. What evidence is there of

Defensiveness - Joan could see no reason why she shouldn't work, wasn't the country club type, wouldn't waste time.

Respect for individual differences or lack of it - wife's place in the home.

John - realized Joan had talent and needed to use it.

How do these factors influence the communication process?

Respect is necessary for understanding. If one is defensive, and feels he must protect self, and own point of view, he is not in a position to understand the other person's point of view.

4. Which person seemed to have the greater ability for self-expression. Why?
5. What evidence is there of a desire to understand the other's viewpoint?
6. Identify factors which you believe helped Joan and John to communicate. How do these facilitate communication?

Ability to listen.

Honest in expressing feelings.

7. What factors seemed to hinder effective communication?

Difference in values.

Defensiveness.

Broad generalities - woman's place in the home.

APPENDIX F

TABLE VIII

TEST DATA AND RANK IN GRADUATING CLASS FOR 131 STUDENTS

Student	Pre-test Score	Post-test Score	Application of Principles Test Score	Composite Concept Score	Concept I (Empathic Ability)	Concept II (Respect for Worth & Dignity of Individual)	Concept III (Healthy Concept of Self)	Concept IV (Communication)	American College Test Score	Rank in Graduating Class
1.	33	21	45	203	55	40	63	45	14	3
2.	--	16	29	163	35	34	53	41	13	--
3.	14	19	29	203	49	40	67	47	23	--
4.	11	7	35	144	40	28	42	34	--	3
5.	9	14	31	149	37	33	42	37	9	3
6.	14	31	29	187	49	44	48	46	20	4
7.	17	17	31	186	49	39	47	44	21	4
8.	18	18	42	178	43	38	36	41	--	3
9.	4	12	23	141	41	24	40	36	--	2
10.	14	27	52	204	47	41	68	48	20	4
11.	11	8	30	123	34	31	29	29	17	1
12.	10	22	27	175	39	31	62	43	16	2
13.	8	20	26	205	54	40	65	46	20	4
14.	8	--	27	---	43	35	73	--	--	3
15.	7	24	38	151	35	34	45	37	--	3
16.	7	12	23	146	41	28	43	34	--	2
17.	13	21	41	198	52	35	66	45	20	4
18.	10	12	41	276	49	37	53	37	16	2
19.	9	17	36	150	37	33	43	37	17	3
20.	10	20	46	189	49	32	64	44	24	4
21.	8	--	38	145	33	32	43	37	7	3
22.	20	18	28	180	44	37	62	37	--	3
23.	--	--	18	144	40	31	37	36	12	3
24.	10	14	42	184	48	35	61	40	17	3
25.	8	16	37	153	36	33	41	43	27	4
26.	15	30	45	207	50	40	70	47	--	--
27.	10	30	36	148	38	33	39	38	--	2
28.	16	14	41	183	47	39	55	42	20	4
29.	9	16	30	185	48	33	59	45	--	4
30.	16	17	47	193	44	42	65	42	--	4
31.	21	20	32	194	51	38	61	44	26	4
32.	8	7	34	163	41	38	48	36	--	2
33.	8	12	28	---	37	26	37	--	--	1
34.	10	16	29	170	44	35	53	38	24	4
35.	15	17	32	162	46	37	43	36	--	2
36.	10	13	29	167	40	38	50	39	--	2
37.	12	36	38	193	45	39	65	44	--	4
38.	9	16	38	---	40	36	--	37	--	3
39.	10	21	47	191	50	42	54	45	25	4
40.	9	19	40	154	40	32	43	39	17	4
41.	17	30	43	186	43	33	66	44	--	--
42.	14	25	38	198	50	39	64	45	26	3
43.	15	20	29	168	47	30	48	43	--	4
44.	9	17	44	166	42	37	50	38	22	3
45.	15	12	27	163	39	36	52	36	22	--
46.	12	14	29	176	45	34	58	39	18	4
47.	8	16	21	176	44	36	56	40	19	--
48.	--	18	24	140	34	36	38	32	15	2
49.	22	22	43	215	51	42	78	44	--	--
50.	13	18	35	193	45	41	62	45	22	4
51.	6	12	21	135	31	34	36	34	--	3
52.	15	18	36	---	50	--	53	42	22	--
53.	4	16	22	163	41	32	51	39	17	--
54.	9	12	38	159	40	36	48	35	20	1
55.	9	--	33	165	36	40	51	38	16	--
56.	7	13	39	195	46	39	68	42	--	1
57.	12	18	47	174	45	34	53	43	--	--
58.	9	14	32	185	51	33	66	35	--	1
59.	8	11	37	159	37	38	48	36	--	3
60.	19	--	26	---	--	39	51	41	--	--
61.	18	--	32	164	35	36	56	37	17	4
62.	--	16	37	---	34	31	47	--	--	2
63.	16	--	45	184	45	36	59	44	21	3
64.	8	23	29	169	37	25	63	44	22	2

TABLE VIII (Continued)

Student	Pre-test Score	Post-test Score	Application of Principles Test Score	Composite Concept Score	Concept I (Empathic Ability)	Concept II Respect for Worth & Dignity of Individual)	Concept III (Healthy Concept of Self)	Concept IV (Communication)	American College Test Score	Rank in Graduating Class
65.	11	23	50	178	40	37	52	49	15	2
66.	10	19	29	177	43	34	57	43	---	3
67.	12	26	37	168	36	33	59	40	17	3
68.	17	24	29	160	38	30	54	38	---	3
69.	10	17	26	---	---	32	55	37	---	3
70.	11	24	50	194	42	38	66	48	---	3
71.	16	24	37	---	43	30	55	---	---	2
72.	10	14	33	162	39	37	51	35	---	3
73.	8	17	34	150	32	29	52	37	---	2
74.	10	26	49	191	42	41	61	47	22	4
75.	8	11	45	---	39	34	46	---	19	3
76.	8	20	27	134	28	30	40	36	12	3
77.	8	21	45	183	53	28	59	43	26	---
78.	11	26	35	166	39	40	45	42	---	4
79.	9	11	49	158	40	36	48	34	19	3
80.	10	27	36	153	33	30	52	38	18	3
81.	11	22	41	170	40	34	57	39	---	---
82.	25	39	45	214	48	45	72	49	---	---
83.	15	27	46	200	48	36	69	47	---	3
84.	8	15	38	---	35	---	---	34	---	1
85.	16	20	29	---	38	---	---	47	---	3
86.	6	37	36	173	43	35	54	41	---	4
87.	8	24	41	170	36	32	55	47	21	3
88.	9	21	46	179	46	37	57	39	---	4
89.	6	21	39	183	45	36	57	45	---	2
90.	7	22	44	172	38	32	59	43	---	3
91.	11	25	40	195	46	42	62	45	21	---
92.	15	31	42	190	42	40	62	46	---	4
93.	13	24	47	181	44	38	57	42	---	3
94.	10	22	31	145	35	30	42	38	---	1
95.	9	12	44	140	36	25	45	34	19	3
96.	13	22	42	191	51	33	60	47	---	3
97.	21	37	31	187	45	29	68	45	---	4
98.	9	24	32	157	39	37	50	31	---	4
99.	10	37	51	217	51	45	69	52	26	4
100.	8	18	41	155	41	26	47	41	17	2
101.	10	24	45	186	43	34	63	46	---	4
102.	14	33	38	177	46	36	49	46	---	3
103.	8	29	48	209	50	37	73	49	30	4
104.	16	36	26	157	43	30	44	40	---	1
105.	6	21	34	---	---	37	55	41	20	4
106.	6	17	44	166	41	31	56	38	19	3
107.	6	20	39	173	43	32	57	41	---	---
108.	7	26	39	---	40	---	52	36	20	4
109.	10	27	36	147	35	28	46	38	---	---
110.	7	22	46	175	42	32	60	41	22	4
111.	11	16	32	146	37	33	37	39	17	2
112.	14	40	36	182	40	33	64	45	---	4
113.	8	26	48	195	44	38	64	49	21	4
114.	7	22	34	158	41	29	50	38	19	---
115.	17	24	46	197	42	41	63	51	20	4
116.	11	27	36	179	42	36	62	39	20	4
117.	15	28	49	184	44	37	56	47	---	4
118.	9	17	26	153	43	31	43	36	9	2
119.	18	39	21	171	43	35	50	43	---	3
120.	12	33	42	209	50	43	69	47	28	4
121.	8	18	20	170	43	34	54	39	---	3
122.	10	22	29	159	37	25	56	41	---	3
123.	9	26	43	203	46	40	69	48	23	4
124.	8	25	48	201	48	41	63	49	30	4
125.	12	30	35	141	33	28	50	30	---	4
126.	8	17	27	147	35	28	47	37	---	3
127.	8	23	41	180	45	32	59	44	---	4
128.	10	27	29	160	46	35	45	34	16	2
129.	6	14	36	138	33	27	44	34	12	2
130.	10	22	48	---	50	---	64	41	---	4
131.	---	---	44	198	44	38	70	46	21	4

TABLE IX
STUDENT SCORES ON PERSONALITY ORIENTATION INVENTORY

Student	Inner-Directed	Self-Actualizing Value	Existentiality	Feeling Reactivity	Spontaneity	Self-Regard	Self-Acceptance	Capacity for Intimate Contact	Personality Orientation Inventory
1.	--	--	--	--	--	--	--	--	--
2.	86	22	18	15	15	16	17	18	296
3.	76	21	15	14	10	13	13	16	288
4.	--	--	--	--	--	--	--	--	--
5.	81	18	18	19	12	8	18	17	296
6.	83	19	20	17	15	12	15	20	288
7.	92	20	25	17	12	7	19	24	313
8.	73	15	18	14	10	8	15	21	277
9.	72	20	13	13	9	14	15	12	277
10.	88	20	15	16	14	13	18	21	303
11.	89	20	18	14	11	15	16	20	299
12.	61	14	12	14	8	10	11	11	260
13.	69	17	19	15	9	8	16	13	264
14.	76	21	13	13	12	14	14	11	283
15.	79	20	17	15	11	11	16	18	280
16.	84	14	21	16	11	9	22	21	295
17.	74	17	15	13	7	12	15	14	271
18.	62	14	12	8	6	11	14	12	242
19.	89	22	19	20	10	11	14	20	306
20.	86	20	23	14	14	12	19	22	303
21.	77	20	20	15	11	10	15	16	284
22.	75	18	14	13	14	11	13	13	279
23.	88	24	18	16	12	15	17	19	309
24.	79	20	17	14	11	12	17	14	293
25.	84	21	17	16	11	12	15	19	295
26.	92	20	18	15	15	14	19	17	307
27.	84	18	20	16	11	12	16	18	298
28.	87	17	20	17	9	12	19	19	283
29.	59	19	11	6	8	12	10	9	252
30.	85	18	23	13	14	10	18	21	299
31.	84	20	20	17	13	11	17	16	305
32.	82	17	14	19	12	13	17	18	293
33.	50	13	10	10	9	9	10	6	215
34.	86	19	21	15	9	12	19	21	302
35.	92	20	24	21	14	15	17	22	314
36.	73	18	20	17	14	8	15	13	286
37.	73	21	14	12	10	11	15	14	281
38.	70	19	15	13	13	8	11	13	272
39.	80	21	22	16	11	12	14	18	300
40.	81	22	19	13	11	13	14	16	292
41.	80	20	13	18	15	13	14	19	293
42.	72	18	18	12	9	10	15	13	277
43.	83	22	20	17	14	12	10	21	300
44.	86	22	17	18	10	13	17	17	304
45.	90	18	20	14	13	13	22	16	301
46.	92	18	21	17	15	12	21	22	314
47.	94	20	21	20	13	14	19	21	317
48.	80	19	20	17	9	8	17	19	288
49.	96	23	20	16	12	16	20	22	321
50.	93	25	16	18	14	15	15	19	314
51.	90	20	22	12	9	13	17	18	303
52.	83	19	23	15	14	13	20	17	299
53.	82	17	22	15	10	11	17	16	296
54.	80	21	15	16	14	11	14	16	292
55.	81	22	20	14	11	14	15	18	295
56.	60	17	12	13	8	6	14	9	255
57.	87	17	17	20	12	14	18	23	306
58.	95	22	25	15	14	13	17	22	320
59.	88	22	20	19	14	12	16	16	306
60.	89	24	20	21	16	11	12	20	315
61.	--	--	--	--	--	--	--	--	--
62.	99	18	24	16	13	14	22	52	302
63.	77	20	20	13	11	9	20	14	286
64.	76	22	18	15	11	10	12	16	286

TABLE IX (Continued)

Student	Inner-Directed	Self-Actualizing Value	Existentiality	Feeling Reactivity	Spontaneity	Self-Regard	Self-Acceptance	Capacity for Intimate Contact	Personality Orientation Inventory
65.	90	20	21	12	16	14	19	17	305
66.	76	19	17	14	12	13	15	19	287
67.	78	20	22	14	12	11	14	17	289
68.	79	19	15	14	7	11	19	16	278
69.	94	20	22	18	15	13	19	17	283
70.	91	20	18	13	14	12	19	19	302
71.	85	16	21	15	13	12	12	18	291
72.	76	19	14	13	9	12	15	16	278
73.	93	23	22	17	15	13	20	20	308
74.	70	18	15	11	7	11	14	11	268
75.	84	16	20	17	13	13	21	19	303
76.	102	21	25	21	17	14	24	22	330
77.	92	23	25	15	11	14	16	20	310
78.	86	18	25	17	11	17	6	21	301
79.	69	19	16	13	9	11	12	11	272
80.	89	19	25	15	11	10	20	20	310
81.	98	22	24	18	15	14	22	21	323
82.	72	19	18	11	5	9	13	17	272
83.	101	24	21	19	14	16	19	23	329
84.	92	23	25	12	17	13	18	20	315
85.	73	11	19	13	11	9	16	15	258
86.	77	21	14	13	9	14	15	14	284
87.	88	24	19	15	16	12	15	17	309
88.	86	23	18	15	14	13	14	17	299
89.	80	16	18	17	13	12	19	20	298
90.	91	24	17	16	15	13	20	18	310
91.	71	20	11	14	10	12	15	13	278
92.	77	20	18	12	9	14	14	13	271
93.	87	24	20	16	10	14	16	19	308
94.	84	22	22	18	13	12	15	19	307
95.	69	18	16	13	6	11	14	14	277
96.	94	19	22	19	12	13	20	19	310
97.	94	22	27	15	14	11	21	21	317
98.	76	19	17	11	11	10	13	16	276
99.	80	20	22	14	13	11	15	15	301
100.	71	16	15	11	12	11	16	16	276
101.	85	18	24	16	11	12	15	17	296
102.	82	19	18	15	9	11	16	16	289
103.	98	23	21	21	14	13	16	21	319
104.	80	17	20	10	14	15	17	14	287
105.	98	22	24	18	15	14	21	23	325
106.	88	20	20	18	14	13	19	16	307
107.	69	17	11	16	10	10	16	12	270
108.	94	22	24	18	13	14	20	22	313
109.	76	19	24	12	12	8	16	17	295
110.	74	19	18	11	9	13	19	13	275
111.	54	11	14	12	4	3	12	17	247
112.	78	19	12	13	15	13	19	15	281
113.	80	19	23	23	12	12	13	22	300
114.	90	21	22	16	13	14	20	20	315
115.	80	21	17	15	12	12	13	20	296
116.	86	23	18	16	11	13	14	18	302
117.	92	20	22	20	16	12	17	21	319
118.	82	16	18	17	14	12	18	18	293
119.	80	18	19	17	10	9	15	16	289
120.	78	17	19	13	11	12	18	14	286
121.	70	20	17	14	13	10	12	14	281
122.	88	21	20	17	13	12	20	16	302
123.	75	20	15	16	12	12	12	17	262
124.	84	22	18	19	15	9	12	21	301
125.	70	16	11	14	8	12	15	11	267
126.	75	15	17	14	9	9	16	17	276
127.	68	21	17	13	8	9	11	15	271
128.	78	18	15	12	11	13	19	16	271
129.	64	16	16	16	16	7	10	18	269
130.	78	21	20	16	13	10	15	20	297
131.	77	18	16	16	12	11	16	15	291

VITA

Helene Perry Hoover

Candidate for the Degree of

Doctor of Education

Thesis: CONCEPT DEVELOPMENT OF COLLEGE STUDENTS EXPOSED TO SYSTEMATIC,
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